

A MODEL OF GLOBAL LEARNING: HOW STUDENTS CHANGE THROUGH  
INTERNATIONAL HIGH-IMPACT EXPERIENCES

A Dissertation

by

TOBIN DEAN REDWINE

Submitted to the Office of Graduate and Professional Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Chair of Committee,	Tracy Rutherford
Committee Members,	Gary Wingenbach
	Gary Briers
	Chris Skaggs
Head of Department,	John F. Elliot

December 2014

Major Subject: Agricultural Leadership, Education, and Communications

Copyright 2014 Tobin Redwine

## ABSTRACT

Study abroad programs are important, increasing, impactful, and influential in agricultural disciplines. Research suggests that students who participate are changed. However, we do not yet have a clear understanding for how that change is manifested. How do students who participate in a study abroad program change?

One measure of student change that has been employed at Texas A&M University, as well as at institutions around the country is the Global Perspectives Inventory (GPI). Students who study abroad at Texas A&M have been shown to be statistically significantly different from the general population of seniors. As such, investigation into the manifestation of changes in each of domains measured by the GPI as a result of study abroad is warranted.

The purpose of this study was to develop a model to explain the viewpoints of student changes by students who participate in a study abroad experience. To meet that purpose, three objectives were utilized. First, a qualitative phenomenology comprised by semi structured interviews was conducted. Second, a Q-methodological study was conducted to characterize the viewpoints of student change through factor analysis. Third, findings from the first two objectives were synthesized to create a model of student change.

Findings for objective one listed 45 specific outcomes, categorized across each of the three domains of human development. Findings for objective two found that three distinct viewpoints on the nature of changes in students as a result of a

study abroad emerged. These viewpoints were typified and characterized through factor analysis. The viewpoints were defined as “Collaboration,” “Context,” and “Confidence.”

The viewpoints defined in objective two, along with specific outcomes identified in objective one, were synthesized to create a model of student development that graphically conceptualizes the viewpoints of human development.

Recommendations include assignments and activities for practitioners, including team-based activities, public displays, and intense reflection.

Finally, Q-methodologies are shown to be a positive and cerebral exercise that should be employed both as a tool for reflection and for measurement of operant subjectivity in global learning.

## DEDICATION

This dissertation is dedicated to the memory of RJ Garner, Lillis Garner, Charles Hayden, and Dr. Lanse T. Fox. I pray you live forever on a sunny day in the shade.

## ACKNOWLEDGEMENTS

The completion of this dissertation is not due to a preponderance of skill, wisdom, or enlightenment, nor is it a singular effort. Laud and gratitude belongs to a crucial cast of characters, without whom this journey would never have been completed.

First and most importantly, I am thankful to God for his providence and guidance. Some days the path is clear and my ankles feel strong. Other days I rely heavily on others. God has strategically placed people and events in my life that have dramatically changed the trajectory of my character and performance. I hope that my academic career will serve a greater purpose, designed and crafted according to plans not of my own.

In May of 2014, my world changed. Eli, I hope I can be an example of perseverance for you. I hope to teach you that learning is a lifelong pursuit producing boundless rewards. I hope I can teach you to have busy hands, a caring heart, and an iron resolve. I hope I can teach you to be a good man. I hope I can teach you many things, because you have already taught me to be better. I am thankful.

I have had many influential teachers that have helped prepare me for this, and many other undertakings. Mom, you taught me that reading is not a spectator sport. You taught me that personality can be pervasive, and to always live, love, laugh and be happy. Dad, you taught me to pray, to respect all people, and to laugh loudly. You also taught me that when it comes to family, no task is too difficult. You live a daily

example for me to follow. Jarah, Brice, and Shannon, you have coached, inspired, trained, and polished me through every task I have ever faced. You have been your brother's keeper. I learned how to believe in myself because of your support. My Herzog family, thank you for welcoming me with open arms, love, and support. Family is a gift, and mine continues to grow.

I frequently reflect on my journey as a student. Nearly ten years ago, I met Dr. Tracy Rutherford. For a decade, every gem of advice you have given has been accurate, and every prediction or promise you offered has come true. You had vision that I lacked, and now I am reaping the benefits of your foresight and patient guidance. Thank you for seeing potential in me, even when I didn't deserve it, and for leading me to completion of this journey without cutting corners or sparing me from any challenge. I have grown exponentially under your tutelage, and I hope to emulate your dedication to building people to their potential.

Another influential storyteller in this narrative is Dr. Gary Wingenbach. Your leadership and benevolence has literally taken me around the world. You unwaveringly demand excellence and never settle for ineptitude or injustice. Philosophical sundowners and your blues collection have undoubtedly equipped me to be a better researcher and educator.

I learned that every word is purposeful and every story has meaning from Dr. Gary Briers. Your pragmatic approach to bringing students to grasp complex concepts, your penchant for simplifying the indiscernible, and your systematic and

persistent attention to detail is a world-class example. This research project, and many others are the beneficiaries of your commitment.

I learned that no matter what your duty or assignment is, you can give value and priority to people from Dr. Chris Skaggs. You lead by example. You never compromise your values. You go above and beyond your duties when asked, and you do so without fanfare or attention. You have quietly shaped the legacy of thousands of students through your commitment to agriculture, and to positive values, and to developing people. Thank you for being in my corner.

The ALEC department at Texas A&M is a familial collection of educators and collaborators. I am indebted to the kindness and teamwork of so many; Charlene, Jonathan, Landry, April, Sarah, Reid, Dr. Deb, Annie, Caro, Holli, and countless others. I am a product of this department. I am part of this department, and I believe in the future of this department. Thank you all for shaping my knowledge.

Additionally, I have had committed educators who opened doors and opened my mind on many levels. To the faculty of the Department of Agricultural Education and Communications at Texas Tech University, the teachers of Lazbuddie ISD, and the many other educators in various shapes and capacities along this adventure, please accept my immense gratitude and appreciation. Two others deserving of special thanks and recognition are mentors who have guided me well beyond their obligation and occupational duties. Dr. Dale Pracht and Dr. Cindy Akers, you both have been fiercely loyal, supportive, honest and sincere. Thank you.

Lastly, there is one individual who unquestionably deserves all the credit, goodwill, thanks, and honor I can ever convey. Shanna, you are my answer, you are my purpose, you are my anchor. God changed my life when he put you in it. You are my compass and my muse. You are my accountability and support. You are my best friend, you are my partner. You are an example of ambition and dedication. You are the best wife and mother that I could imagine. Eli and I are lucky beyond belief. You are the answer to all of our prayers. With you, my heart is full. Matthew 12:34 says that at the overflow of the heart, the mouth speaks. When I say that I love you, know that it comes from an overflowing, untamed, unceasing source.

Thank you all for sharing in my story.



## TABLE OF CONTENTS

	Page
ABSTRACT .....	ii
DEDICATION .....	iv
ACKNOWLEDGEMENTS .....	v
TABLE OF CONTENTS .....	ix
LIST OF FIGURES .....	xi
LIST OF TABLES .....	xii
CHAPTER I INTRODUCTION .....	1
Educational Philosophy .....	1
Experiential Education .....	1
High-Impact Experiences as a Component of Experiential Education .....	2
Study Abroad as a High-Impact Experience .....	3
National Research Agenda on Global Learning .....	4
TAMU Vision 2020 on Global Learning .....	4
College of Agriculture & Life Sciences on Global Learning .....	5
ALEC Department on Global Learning .....	6
Summary .....	8
CHAPTER II REVIEW OF LITERATURE .....	10
High-Impact Experiences .....	10
Study Abroad Programs as HIPs .....	11
Global Perspectives Inventory .....	15
Theoretical Framework .....	17
Summary .....	21
Purpose .....	22
CHAPTER III METHODS .....	24
Population .....	24
Objective One .....	24
Sample .....	25
Data Collection .....	26
Data Analysis .....	27

Objective Two .....	28
Concourse .....	29
Q-set. ....	29
P-set. ....	33
Q sort. ....	35
Data Analysis. ....	38
Objective Three .....	42
CHAPTER IV FINDINGS AND RESULTS .....	43
Objective One.....	43
Intrapersonal Domain .....	44
Interpersonal Domain .....	46
Cognitive Domain .....	49
Specific Outcomes .....	51
Objective Two .....	51
Objective Three .....	65
CHAPTER V CONCLUSIONS AND RECOMMENDATIONS .....	69
Conclusions .....	69
Objective One.....	69
Objective Two .....	70
Objective Three .....	78
Recommendations .....	81
REFERENCES .....	85
APPENDIX A .....	94
APPENDIX B .....	95
APPENDIX C .....	96

## LIST OF FIGURES

	Page
Figure 1. Adaption of the Braskamp et al. (2013) recreation of King and Baxter Marigold's (2005) conceptualization of Kegan's (1994) model of human development. ....0....	19
Figure 2. Adapted from Bandura's Social Cognitive theory (1986) .....	21
Figure 3. Q-sort distribution.....	37
Figure 4. Initial conceptualization of adapted model of human development .....	68
Figure 5. A model of student change as a result of an international high-impact experience.....	80

## LIST OF TABLES

	Page
Table 1. Representation of Kegan's (1994) domains imposed in the Q-set.....	30
Table 2. Q-set statements .....	31
Table 3. Demographic characteristics of P-set.....	34
Table 4. Descriptive characteristics of interview participants .....	44
Table 5. Initial categorization of items for each sort.....	52
Table 6. Q-Sort intercorrelation matrix .....	54
Table 7. Unrotated factor matrix .....	55
Table 8. Rotated factor solution .....	57
Table 9. Reliability of factor solution .....	57
Table 10. Intercorrelation between factors.....	59
Table 11. Q-sort values for statements sorted by consensus vs. disagreement .....	60
Table 12. Distinguishing statements for Factor 1 .....	63
Table 13. Distinguishing statements for Factor 2 .....	64
Table 14. Distinguishing statements for Factor 3 .....	65

## CHAPTER I

### INTRODUCTION

#### **Educational Philosophy**

John Dewey posited that the purpose of education has been static throughout history: equip students with the skills they need to purposefully develop into members of society (Dewey, 1938). Educational practitioners have adopted multiple strategies toward this end. Indeed, across time our greatest philosophers and minds have pondered the nature of knowledge and learning. Plato, Descartes, Locke, Kant, Hume, and countless others proffer philosophies and commentary on the subject (Gould & Mulvaney, 2007). Martin Luther King challenged educators to build students who can think critically; armed with the potent combination of “education plus character” (King, 1948). From Dewey to King, through Aristotle and Freire to the current, educators continue meet those varied charges and challenges with varied approaches, but a similar intent: “The broader humanistic purpose includes all of them, and goes beyond them, for it seeks to encompass all the dimensions of human experience” (Foshay, 1991 p. 277).

#### **Experiential Education**

Foshay’s words are chosen carefully. The human experience is an essential and inextricable component of education. Education based on experience is a concept that has held its place in the scholarship for almost a century (Dewey, 1938; Joplin, 1981; Moore, 1990; Roberts, 2006; Stimson, 1919). Experiential education has proven to be an approach to learning that transcends disciplines, and especially embraced by agricultural education (Roberts, 2006). In fact, Dewey (1938) posits that all learning instances are

experiential in nature, though not all experiences yield educational value. This notion challenges educators to create experiences that educate, and that matter.

Experiential education can be defined as either a process or through context (Roberts 2006). We know experiential learning as a cyclical model (Joplin, 1981; Kolb, 1984) applied to multiple educational practices. At its core, experiential education is built on “reflective thought” that enables learners to make sense of their observations and interactions with the world (Dewey, 1910/1997). Kolb took Dewey’s work on how individuals think and learn and further developed the idea of experiential learning. Kolb’s (1984) model of experiential learning includes concrete experiences, reflective observation, abstract conceptualization, and active experimentation in a cyclical model of how we grasp and transform knowledge. This model lays the foundation of the relationship between experiences and education.

### **High-Impact Experiences as a Component of Experiential Education**

In current educational practice, practitioners seek experiences that transcend the classroom. Kuh (2008) highlights this trend and defines the importance and characteristics of high-impact experiences, a form of experiential education. Kuh identified common high-impact experiences; First-year seminars and experiences, common intellectual experiences, learning communities, writing intensive courses, collaborative assignments and projects, undergraduate research, diversity/global learning, internships, and capstone courses and projects.

Thus, the literature yields that experiential education is a historical tenet of the nature of education, high-impact experiences are a form of experiential education, and global learning is a tenet of high-impact experiences.

### **Study Abroad as a High-Impact Experience**

Though they have been around for longer (Abrams, 1960), study abroad programs came to national attention in the 1970s (Perkins, 1978). Since then, they have become increasingly prevalent and popular in American universities (Carlsen, Bum, Useem, & Yachimowicz, 1991; Engle & Engle, 2003; Institute of International Education, 2013). In fact, a record number of students studied abroad in 2013 (Institute of International Education, 2013).

As they become more prevalent, it is necessary to foster deeper understandings of how they impact our students, and how we can shape educational experiences out of them. As such, multiple measures, theories and instruments have been created to explain and describe the impact that study abroad programs can have (Aboagye, 2011; Carlsen et al., 1991; Engle & Engle, 2003; Kelly & Meyers, 1995; Lee, 2011; Rhodes, Loberg, & Hubbard, 2014; Twombly, Salisbury, Tumanut, & Klute, 2012).

Carlsen et al. (1991) note that students who study abroad do change, and research exists that supports that idea. Indeed, the concept of what changes students incur through study abroad is well researched. However, less research looks at how that change happens.

## **National Research Agenda on Global Learning**

Agricultural Education as a discipline recognizes the role of study abroad programs and international experiences. The National Research Agenda for the American Association for Agricultural Education (Doerfert, 2011) notes the influence of the Association of Public and Land-grant Universities (APLU) Experiment Station Committee on Organization and Policy, Science and Technology Committee report entitled *A Science Roadmap of Food and Agriculture* (2010), which highlights individual and societal needs including the need for U.S. food and agricultural producers to be competitive in a global environment, the need to address global food security and hunger, and the need to attract and develop the next generation of agricultural scientists. These needs were manifested in the National Research Agenda (Doerfert, 2011) in priority four: meaningful, engaged learning in all environments. Specifically, the agenda calls practitioners to meet this priority by challenging us to “examine the role of diversity and multiple perspectives in meaningful learning across agricultural education contexts,” (Doerfert, 2011, p.9).

Global learning environments are diverse perspectives that further our societal, educational, and research needs. Study abroad programs, high-impact experiences that foster experiential education, constitute global learning environments.

## **TAMU Vision 2020 on Global Learning**

More specifically, Texas A&M University is called to investigate the global learning environment. Vision 2020 (Texas A&M University, 1999) outlined the imperatives focused on guiding the institution and creating a culture of excellence.



Imperative six calls for diversifying and globalizing the A&M community. Charged with creating a globally aware populace, study abroad programs can be an invaluable tool in meeting this imperative. Moreover, the Texas A&M Vision 2020 Mid Term Review Committee (2010) identified three “marks of excellence” that continue to shape the works of the university along the lines of *Vision 2020*. Each mark of excellence identifies “illustrative and definitive actions” that meet the marks and reinforce the imperatives of *Vision 2020*. The first mark of excellence is “Lead Educating the Next Generation,” illustrated by encouraging educators to create learners with diverse global perspectives. Definitive actions with this mark include “Ensure that students have high-impact educational experiences including international experiences,” and “Enrich the quality of life for a diverse and global campus environment,” (Texas A&M Vision 2020 Mid Term Review Committee, 2010; p. 3).

### **College of Agriculture & Life Sciences on Global Learning**

As the largest college of agriculture in the world, the College of Agriculture and Life Sciences at Texas A&M University seeks to lead the world in academic and scholarly efforts, as well as meet the challenges issued by *Vision 2020*. As a means of guiding and directing the efforts of the faculty and staff of the college, the *Grand Challenges* were created in 2013 (Texas A&M College of Agriculture & Life Sciences, 2013). The first of the five grand challenges is “Feeding the World”. As outlined in the white paper detailing this challenge, this is a multi-faceted challenge impacting a projected worldwide population of nine billion people by 2050 (Texas A&M College of Agriculture & Life Sciences Grand Challenge FOW Sub Committee, 2013). Five focus

areas were identified to meet this Grand Challenge, including international development. Means of accomplishing this focus area include international collaborative education as well as international faculty involvement and education.

Global learning environments are important to Texas A&M, and the College of Agriculture and Life Sciences.

### **ALEC Department on Global Learning**

The Agricultural Leadership, Education, and Communications department at Texas A&M University also strives to create world-class scholarship and academic opportunities, as stated in the department's mission:

The mission of the Department is to improve the quality of life and well-being of individuals and communities in Texas, in the nation, and in the world through high-quality teaching, research, extension, and outreach programs that communicate crucial information for agricultural sciences and human performance. (Department of Agricultural Leadership, Education, and Communications, 2014, Vision of the department, para. 4).

Guided by that mission, the department approved a strategic plan in 2009 (Department of Agricultural Leadership, Education, and Communications, 2009) that identifies specific benchmarks and objectives for the department. Goal two of that strategic plan is to transform the ALEC knowledge base for a changing world. The program objective for this goal is “to examine the knowledge base against dynamic

global environments to better create, design, and deliver systems for life-long learning for today's target audiences," (Department of Agricultural Leadership, Education, and Communications, 2009). Four of the five strategies outlined to meet goal two specifically address the global learning context.

In meeting this mission and strategic plan, the department articulated Public Values Statements that highlight the efforts and guide the work of the faculty and scholars in the department. Selected public values statements follow:

- ALEC creates an understanding of global cultures and conditions, developing global ready graduates with increased marketability in the workforce.
- ALEC develops cultural skills, establishes networking, and increases agricultural knowledge and understanding of others with an increased capacity to work effectively with clients and colleagues in local to international settings.
- ALEC graduates and faculty involved in international agricultural development serve as positive ambassadors from the United States; more importantly, they assist developing countries in increasing their standards of living and improving economic well-being.
- ALEC provides opportunities for students and faculty to broaden their perspectives from Texas to the nation and to the world. Study away and study abroad programs engage students and

faculty to increase their knowledge and understanding of global issues and opportunities

(Department of Agricultural Leadership, Education, and Communications, 2014, Impact)

Each of the above public value statements express an understanding of the importance of global learning and the global context that university programs can provide to experiential education.

One example of the global learning environment created by the ALEC department is the Namibia Photojournalism Study Abroad Program. This high-impact experience began in 2012. In 2013, the program was funded by a USDA NIFA grant (Wingenbach, Rutherford, & Redwine, 2013). This particular program will be the subject of this study. This introduction is a means to set the context and rationale for this program and for a line of inquiry associated with it.

## **Summary**

Experiential education is an integral part of the body of knowledge concerning how individuals learn. High-impact experiences have been identified to foster implementation of experiential education in university settings. Study abroad and global learning programs are examples of high-impact experiences. Texas A&M University, the College of Agriculture & Life Sciences, and the ALEC Department are committed to developing high-quality and meaningful international high-impact experiences, including the ALEC Namibia Study Abroad Program.

Study abroad programs are important (Engle & Engle, 2003), increasing (Institute of International Education, 2013) and impactful (Carlsen et al., 1991). In fact, Carlsen et al. (1991) note that students who participate *are* changed. However, we do not yet have a clear understanding for *how* that change happens. How do students who participate in a study abroad program change?

## CHAPTER II

### REVIEW OF LITERATURE

#### **High-Impact Experiences**

Kuh (2008) identified common high-impact experiences; First-year seminars and experiences, common intellectual experiences, learning communities, writing intensive courses, collaborative assignments and projects, undergraduate research, diversity/global learning, internships, and capstone courses and projects. In addition to identifying these experiences, he offers discussion about why students should participate in high-impact experiences, based on what we know about students who have participated. According to Kuh (2008), students who participate in high-impact experiences are more likely to see the relevance of learning by applying concepts to the real-world, integrate and reflect on learning, solicit and receive feedback more frequently, interact with diverse experiences, make investments of time and effort, and make substantive interactions with peers and faculty. Kuh's work on high-impact practices helped to found the National Survey on Student Engagement (NSSE), designed to "...provide an estimate of how undergraduates spend their time and what they gain from attending college," (NSSE 2013). Hundreds of universities and thousands of students participate in the study annually, building on the body of knowledge about how we can impact student learning through enhanced experiences.

## **Study Abroad Programs as HIPs**

This study focuses on one particular form of high-impact practice: the study abroad program.

The American Association of Colleges and Universities recognizes the importance of integrating global learning into university curriculum and experiences (Hovland, 2009). Global learning includes the following concepts: health and social justice; sustainability; globalization, wealth, and poverty; identity, culture, and border crossings; and religion in global contexts. How that task is accomplished is a varied approach that includes study abroad as well as other forms of learning:

Global learning is not a task to be assigned to an individual, an office, or a department; it is a complex set of goals and outcomes to be coordinated across and throughout the institution. Consequently, study abroad as a vehicle for global learning needs to be carefully situated within a broader institutional and educational context.

(Hovland, 2009, p. 4)

To understand the broad education context of global learning, we need to understand the most direct and obvious examples of global learning, the study abroad program, and the critical role it plays in our global learning initiatives. Hovland (2009) notes, “Study abroad and study away infrastructure and personnel have a critical role to play in this common endeavor.”

Study abroad programs have diverse and far-reaching impacts. They have been shown to influence culture, adaptation, communication, collaboration, and value of knowledge (Black, Moore, Wingenbach, & Rutherford, 2013) through empowering students to seek application of knowledge while embracing cultures. Other students have been shown to be impacted by exhibiting enhanced confidence, global perspectives, intercultural sensitivity, and self-efficacy (Zhai & Scheer, 2001). Faculty participation in study abroad programs have stimulated curriculum development (Sharp & Roberts, 2013). Potential high school educators who participated in a study abroad program were shown to have substantial changes in knowledge and perceptions of knowledge, as well as perceptions of skills and dispositions in the context of global competency (Foster, Rice, Foster, & Barrick, 2014). Students have been shown to be impacted in their personal and intellectual development through constructs including empathy and emotional maturity as well as critical thinking and problem solving (Farrell & Suvedi, 2002). Still other students have been shown to be impacted in terms of intercultural awareness, personal growth and development, functional knowledge, and global interconnectedness (Chieffo & Griffiths, 2004).

Impacts in specific populations have been measured as well. Students of color who studied abroad have an 18% higher graduation rate than those who did not (Redden, 2010). Further, students of color who participate in a study abroad program may have higher levels of racial identity and ethnic identity development (Day-Vines, Barker, & Exum, 1998; Doan, 2002; Jackson, 2006; Landau & Moore, 2001; Ng, 2003)



Most current research (NSSE, 2013) on high impact experiences suggests that, although they are recognized as a valuable high-impact experience, study abroad experiences are among the least popular of the high-impact practices identified by Kuh (2008). In fact, study abroad programs had the lowest overall participation percentage rates of any of the HIPs measured by NSSE in 2010, 2011, and 2012 (NSSE, 2010; NSSE, 2011; NSSE, 2012). In 2013 study abroad programs were not the lowest in terms of participation percentage rate, but there was still an overall decrease in the percentage rate from 14% in 2012 of students surveyed to 13% in 2013 (NSSE, 2012; NSSE 2013).

In addition, study abroad programs are not representative of student populations as a whole:

African Americans were half as likely as their white peers to have studied abroad, and Latino students were one-third less likely to have done so.

(NSSE, 2010, p. 9)

Sweeney (2013) points out that even though African American and Latino university enrollment percentages have increased in recent years, African American and Latino study abroad participation percentages increased at a slower rate. White students comprise 60% of study abroad participants, constituting an overrepresentation. Sweeney urges researchers to implement lines of inquiry to generate an understanding of study abroad experiences, challenges, and opportunities in order to create a more inclusive environment with study abroad programs.

Bolen (2007) asserts that assessment is one of the most important and relevant pursuits in the discussion of study abroad programs. The need for documented evidence of learning outcomes and measured successes as a result of study abroad programs is echoed by Chieffo and Griffiths (2004):

Given the enthusiasm with which higher education institutions tout their study abroad programs, one might assume that a plethora of data exists to indicate that students reap significant academic and personal benefits from such experiences, but in fact the opposite is true. Professionals in international education have long lamented the lack of a concrete, quantitative foundation of data upon which to base recruitment and program design strategies in order to maximize student learning outcomes. (Chieffo & Griffiths, 2004, p. 165)

Reflection is an integral part of study abroad programs (Harder, Lamm, Roberts, Navarro, & Ricketts, 2012; Lamm, Cannon, Roberts, Irani, Unruh, Brandenmuhl, & Rodriguez, 2011; Roberts & Jones, 2011) and can be an important tool in experiential learning, as well as tool in measuring and assessment in study abroad programs (Black et al., 2013).

Ultimately, the literature points to the notion that study abroad program should continue to be studied, a need for measurement and assessment exists, and a need for a clear understanding of the impact on student participants is slow to materialize.

## **Global Perspectives Inventory**

One tool used in assessing study abroad programs, as well as other populations, is the Global Perspectives Inventory (GPI). The authors sought to create a tool in helping answering, “How do I know,” “Who am I,” and “How do I relate to others?” (Braskamp, Braskamp, & Engberg, 2013). These questions are typified and expressed in a three-domain dynamic, focused on the cognitive (or thinking) domain, intrapersonal (or feeling) domain, and the interpersonal (or relating) domain (Kegan, 1994).

GPI authors (Braskamp et al., 2013) designed the GPI to measure six constructs, two for each of Kegan’s (1994) domains, to reflect both cultural development and intercultural communication theory. The six constructs are: knowing and knowledge (cognitive domain), identity and affect (intrapersonal domain), and social responsibility and social interactions (interpersonal domain).

Nine different versions of the GPI have been developed and tested for reliability and validity, as well as trustworthiness (Braskamp et al., 2013). One version was specifically designed for students who participate in a study abroad experience. Between June 2010 and June 2013, 36,221 students completed the GPI.

Since its development, authors are continuing research to examine the how differences in global perspectives are expressed by different students, and whether or not changes that occur in students who participate in experiences like study abroad are manifested in their perspectives measured in the GPI (Braskamp et al., 2013).

The GPI has been tested continually for more than three years for trustworthiness of self-report, validity, and reliability (Braskamp et al., 2013). The GPI was designed to generate trustworthy self-reported data in respondents by incorporating questions that can be answered in a highly socially acceptable manner, giving respondents no reason to misrepresent themselves, however, the authors concede that data should be viewed under the assumption that respondents are honest in their answers (Braskamp et al., 2013). The GPI was tested for reliability by performing a test-retest reliability study as well as testing the measure for internal consistency. Test-retest reliability data reported consistency in responses. Where differences do exist, authors attribute such an anomaly to the length of the study abroad (Braskamp et al., 2013). With regards to internal consistency, the responses of more than 9000 students were examined and returned internal consistency alpha coefficients of more than .65 in each of the six individual constructs of the instrument (Braskamp et al., 2013). The GPI authors measured face validity of the instrument by utilizing principal component analysis with a Varimax rotation. This analysis was performed on more than 9000 responses. Authors found that data from this analysis “provided a strong statistical rationale for the current scales used in the GPI and their conceptual underpinnings,” (Braskamp et al., 2013).

The authors outline specific uses of the GPI, including study abroad and global education assessment (Braskamp et al., 2013).

Texas A&M University has been employing the GPI as a means to measure global learning outcomes since 2010. In the most recent study, the Texas A&M Office of

Institutional Assessment (2013) notes that students who studied abroad were significantly different from seniors in general at Texas A&M in the cognitive, intrapersonal, and interpersonal domain. More specifically, students who studied abroad were statistically different from seniors in each of the following constructs on the GPI: cognitive knowing, intrapersonal affect, interpersonal social responsibility, and interpersonal social interaction.

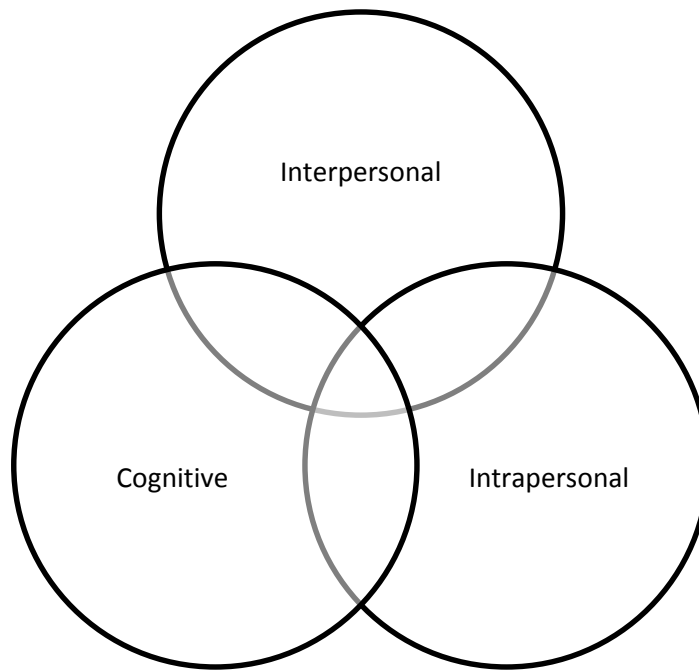
Since the GPI has shown to be reliable and valid (Braskamp et al., 2013) and students who have studied abroad at Texas A&M have been shown to perform significantly different from the general population of seniors at the university (Texas A&M Office of Institutional Assessment, 2013), the constructs that the GPI measure are worth investigating in terms of how they impact change in students who study abroad. This study will utilize the theoretical underpinnings of the GPI as a theoretical framework.

### **Theoretical Framework**

Where literature can point to the prevalence of study abroad programs as a component of high-impact practices, and the documented changes in student factors and characteristics, this study seeks to explain how those changes happen. In seeking that explanation, the researchers will be guided by two theories, Kegan's theory of Human Development (Kegan, 1994), which is the theoretical framework used in constructing the GPI (Braskamp et al., 2013) and Bandura's Social Cognitive Theory (Bandura, 1986). Both theories are focused on cognitive processes that occur as we make meaning from

events in our life. Kegan's theory of Human Development defines domains that explain the nature of changes, where Bandura's Social Cognitive theory addresses causal dynamics.

Kegan's theory of human development (1994) presents a multi-dimensional perspective on holistic development. Kegan notes that as people seek to make sense of the world around them, they rely on thinking, feeling and relating with others to construct their own meaning. Thus, three domains of human development were identified: cognitive, intrapersonal, and interpersonal. King and Baxter Marigold (2005) conceptualized these domains as a part of their work in developing a model for intercultural maturity, which was later used in creating the GPI. Figure 1 depicts King and Baxter Marigold's (2005) conceptualization of Kegan's (1994) model, as recreated by Braskamp et al. (2013):



*Figure 1.* Adaption of the Braskamp et al. (2013) recreation of King and Baxter Marigold's (2005) conceptualization of Kegan's (1994) model of human development.

King and Baxter Marigold (2005) offered a conceptualization that provides context for student development. As we seek to explain how changes happen in students as a result in study abroad programs, it is essential to view them through a lens of interpersonal, cognitive, or intrapersonal domains. The interpersonal domain addresses the question, "How do I relate to others?" (Braskamp et al., 2013), while the intrapersonal domain addresses the question, "Who am I?" and the cognitive domain answers the question, "How do I know?" Though useful in framing context, this model does not claim to offer causal

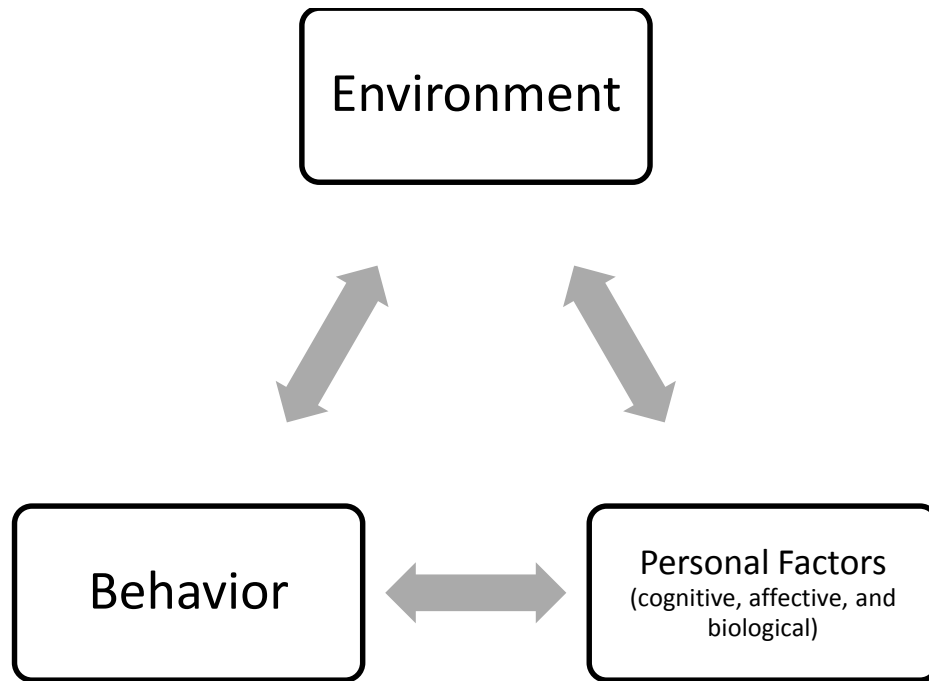
discussions. Additionally, specific deliverables, skillset benchmarks, or learning outcomes are not explicitly addressed in the model.

In seeking causal models, we turn to Bandura (1986). Bandura does claim to explain causality, and does so with a model of triadic reciprocity:

In this model of reciprocal causality, interpersonal factors in the form of cognitive, affective and biological events; behavioral patterns, and environmental events all operate as interacting determinants that influence one another bidirectionally. (Bandura, 1999, p. 23)

Bandura (1999) notes that historically, theories have attempted to explain human behavior in one of two philosophies; either humans are controlled and shaped by environmental stimuli and at the mercy of those influences, or that internal dispositions drive human behavior. Bandura posits that neither are true, and that both are true. Human behavior is determined by external environment, and human behavior is controlled by internal determinants. Human behavior also affects external and internal determinants. In Bandura's triadic reciprocal model, behavior effects and is effected by our personal factors (which are classified in three different categories). Our personal factors effect and are effected by our environment. Our environment effects and is effected by our behavior. Thus creating the dynamic displayed in Figure 2:





*Figure 2. Adapted from Bandura's Social Cognitive theory (1986)*

In utilizing both these theories, we can provide foundational understandings (Kegan, 1994; King & Baxter Marigold, 2005) for the context of the model we hope to build, and theoretical causation that ground the model (Bandura, 1986; Bandura, 1994).

### **Summary**

Current data and the literature can show examples of students who have increased their global perspective, intercultural competence, communication skills, teamwork skills, decision –making, and other soft skills through participation in a study abroad experience (Chieffo & Griffiths, 2004; Farrell & Suvedi, 2002; Texas A&M University Office of Institutional Assessment, 2012, 2013; Zhai & Scheer, 2001). The GPI is one effort at documenting and measuring that change (Braskamp et al., 2013),

though it does not seek to explain those changes. We know that participating in a study abroad changes students. We need to know *how*.

## **Purpose**

The purpose of this study was to develop a model to explain the viewpoints of student changes by students who participate in a study abroad experience. In meeting that purpose, the following objectives were employed:

1. Identify specific change outcomes in students' global perspectives through participation in a study abroad program
  - 1.1 Conduct a qualitative phenomenology, comprised by semi-structured interviews and the constant comparative method
2. Explain the viewpoints of change between subjects who participate in a study abroad
  - 2.1 Conduct a Q methodological study, comprised of the Q sort collection method and factor analysis
    - 2.1.1 Synthesize and analyze data from objective two to develop a concourse
    - 2.1.2 Administer Q sort to a purposive sample of ALEC Namibia 2014 participants
    - 2.1.3 Implement factor extraction utilizing Principal Component Analysis (PCA)

- 2.1.4 Implement factor rotation utilizing Varimax factor rotation technique
  - 2.1.5 Implement factor analysis to interpret and explain viewpoints of student change.
- 3. Develop a model for change in international high-impact experiences
  - 3.1 Utilize factor analysis from objective two and theoretical framework to create graphical explanatory model.

## CHAPTER III

### METHODS

This study was comprised of three different phases, each guided by a specific research objective and sub-objectives to meet the purpose. Each phase was treated as an independent study with a different research design and methodology, however the cumulative study will be considered in its entirety to meet the purpose and develop a model of change in global perspectives in students who participate in high impact experiences. Approval for research involving human subjects was obtained through Texas A&M IRB office. IRB approval is included in Appendix A.

#### **Population**

The population of this study was comprised of student participants in the ALEC Namibia study abroad program from 2012-2014 (N=34). These students are mostly female, though both genders were represented; mostly undergraduate, though both graduate and undergraduate students were represented. Students are mostly white and are between the ages of 18 and 28. These students participated in an international education program in Namibia, where they earned six hours of credit from the department of Agricultural Leadership, Education and Communications at Texas A&M University. Each iteration of the program was more than two but less than six weeks in length, and occurred in July and August of each year.

#### **Objective One**

The first objective of this study is to identify specific change outcomes in students' global perspectives through participation in a study abroad program. To meet

this objective, the study utilized a qualitative phenomenology comprised by semi-structured interviews.

Phenomenologies are conducted to “depict the essence or basic structure of an experience,” (Merriam, 2009, p. 25). Merriam notes that qualitative research is useful in determining “how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences,” (Merriam, 2009, p.5). Qualitative studies oftentimes follow quantitative studies in a similar area of inquiry (Merriam, 2009). Quantitative data about potential change in students’ global perspective has been collected and published by Texas A&M’s Office of Institutional Assessment. This study will focused on the interpretation of the experience and how students define and make meaning of changes resulting from their study abroad experience.

### *Sample*

Purposive sampling was utilized in this phase. Students who completed the study abroad program prior to 2014 were purposively sampled from the population. Lincoln and Guba (1985) point out that in qualitative studies, adequate sample size is achieved when data saturation is achieved. As such, our sample size was determined by data saturation. In this study, data saturation was reached at the completion of ten interviews. The sample population included both graduate and undergraduate students, both genders, and students of multiple majors and academic discipline.

### *Data Collection*

Merriam asserts that interviews are the most appropriate form of data collection in qualitative phenomenologies:

To get at the essence or basic underlying structure of the meaning of an experience, the phenomenological interview is the primary method of data collection. (Merriam, 2009; p. 25)

As such, semi-structured interviews were conducted to collect data about how students changed through participation in a study abroad program. Questions were created with Patton's (2002) six types of interview questions in mind: experience and behavior questions, opinion and value questions, feeling questions, knowledge questions, sensory questions, and background/demographic questions. An interview protocol was developed by the researcher based on the theoretical frameworks of the study, as well as practical knowledge from being a co-program leader and instructor for a study abroad program. Questions were designed to promote discussion about each area of Kegan's (1994) Theory of Human Development. Interview protocols are included in Appendix B. Two pilot interviews were conducted to refine and solidify interview protocol (Merriam, 2009). Participants in the pilot interview were chosen because of their participation in the ALEC Guatemala study abroad program and ALEC Brazil study abroad program. Participants were interviewed in person, when possible, or by Skype when the participant was geographically prohibited from meeting with the researcher. Participants

were coded anonymously, and informed consent was obtained before interviews commenced. Interviews were recorded for clarity and member recall.

### *Data Analysis*

Data was analyzed using the constant comparative method (Merriam, 2009).

Merriam describes the constant comparative method as:

Basically, the constant comparative method involves comparing one segment of data with another to determine similarities and differences. Data are grouped together on a similar dimension. The dimension is tentatively given a name; it then becomes a category. The overall object of this analysis is to identify patterns in the data. (Merriam, 2009; p.30)

Interview transcripts and field notes were used to compare participant responses and identify patterns in the data. Categories and themes generated from the data were triangulated by comparing data from responses with concepts generated from a review of literature and a panel of experts, consisting of ALEC Namibia study abroad program leaders.

In qualitative research, the researcher is the primary instrument for data collection and analysis (Merriam, 2009). As such, it is necessary to identify and monitor and potential bias or subjectivity from the researcher's perspective. My own bias when it comes to this topic is manifested from my experiences as an instructor of the ALEC Namibia Study Abroad program. Therefore, when analyzing data, it was likely that my

observations were influenced from my experience as an instructor and enhanced by my perspective as a study abroad co-leader.

## **Objective Two**

The second objective of the study was to explain the viewpoints of change in students who participate in a study abroad. In meeting this objective, the researcher used outcomes generated in objective one to develop the concourse of a Q Methodological study, to be administered to participants in the 2014 Namibia study abroad program.

Brown (1996) posits that the strength of Q Methodology is that the subjectivity of individuals, normally omitted or marginalized in quantitative methods, is captured in Q Methodology to more effectively catch the essence of the holistic meaning-making of a person. Brown wrote, “It is life as lived from the standpoint of the person living it that is typically passed over by quantitative procedures, and it is subjectivity in this sense that Q methodology is designed to examine,” (Brown, 1996; p. 561). Indeed, the use of Q methodology reflects a post-positivistic paradigm shift in psychological research that helps to “subvert the dominant objectivism” present in traditional factorial analysis, (Durning, 1999). Q Methodology is deemed appropriate methodology for this study in that the changes in study abroad participants are inherently subjective. Each individual is different, and the changes that manifest as a result of study abroad participation are likely to have different affects in students. It is this subjective variance that will be most useful in development of a thorough, systematic and persistent understanding of how students are impacted by factors that were identified in objective two.



Q Methodologies involve creating a concourse, developing a Q-set, identifying and creating a P-set, and administering a Q sort (van Exel & de Graaf, 2005).

### *Concourse*

The concourse in Q Methodology is a term used to describe the “flow of communicability surrounding any topic” as a part of the discourse, discussion, and body of knowledge on a subject (Brown, 1993). Essentially, the concourse is a collection of all the possible viewpoints and statements about a topic, commonly generated from interviewing people, among other techniques (van Exel & de Graaf, 2005; Brown, 1996). In this study, the interviews conducted pursuant to objective one served as the concourse.

### *Q-set*

The next step in conducting a Q methodology is to draw a subset of statements, called the Q-set, from the concourse to be presented to the participants (van Exel & de Graaf, 2005). Brown (1980) notes that this is both an art and a science. Two procedural structures for assigning statements to the Q-set from the concourse exist: emergent structure and imposed structure (van Exel & de Graaf, 2005). In the emergent structure, a purely organic process is employed and the statements emerge from the concourse similar to emergence of themes in the constant comparative method of qualitative phenomenologies. In the imposed structure, theoretical considerations may be implemented and imposed to ensure that the statements selected into the Q-set are “broadly representative,” (Brown, 1980). This study utilized both the emergent structure

and the imposed structure in creating the Q-set. Statements emerged from the concourse pursuant to objective two. Additionally, to ensure that the Q-set was broadly representative, those statements were categorized based on theoretical considerations, namely Kegan's (1994) model of human development which serves as the basis for the development of constructs measured by the GPI (Braskamp *et al.*, 2013). This process resulted in 45 statements being selected from the concourse to build the Q-set. Each of Kegan's (1994) domains are represented by at least 13 statements, as indicated by Table 1.

Table 1.

*Representation of Kegan's (1994) domains imposed in the Q-set*

Theoretical domain	n
Intrapersonal	18
Interpersonal	14
Cognitive	13
Total	45

Statements were coded according to the theoretical domain associated with each statement, IA for intrapersonal, IE for interpersonal, and C for cognitive, followed by a sequential number. The complete Q-set is displayed in Table 2.

Table 2.

*Q-set statements*

Statement number	Theoretical domain	Statement
IA1	Intrapersonal	I am more independent
IA2	Intrapersonal	I am more likely to travel now
IA3	Intrapersonal	I am more confident in my skills and experiences
IA4	Intrapersonal	I handle tension better
IA5	Intrapersonal	I learned to appreciate the comforts of my life
IA6	Intrapersonal	I no longer rely on the comforts of my life
IA7	Intrapersonal	I feel more privileged now
IA8	Intrapersonal	I am more financially responsible
IA9	Intrapersonal	I solidified/ clarified my career goals and interests
IA10	Intrapersonal	I understand my strengths and abilities better
IA11	Intrapersonal	I am proud of my academic achievement
IA12	Intrapersonal	I try not to be too introspective
IA13	Intrapersonal	I enjoy being outdoors more
IE14	Interpersonal	I listen more now
C1	Cognitive	I understand international issues more
C2	Cognitive	I became more patient

Table 2. Continued

Statement number	Theoretical domain	Statement
C3	Cognitive	I reaffirmed an interest in international development as a passion/ career
C4	Cognitive	I am better able to make comparisons to other cultures
C5	Cognitive	I learned how to do research and test an idea
C6	Cognitive	I look at decisions differently
C7	Cognitive	I relate everyday experiences to my international experiences to make sense of them
C8	Cognitive	I am more academically focused now
C9	Cognitive	I choose harder classes now
C10	Cognitive	I am a more adaptable learner
C11	Cognitive	I learned to prioritize activities now
C12	Cognitive	I no longer jump to conclusions
C13	Cognitive	I experienced depression when I got home

### *P-set*

Purposive sampling was utilized in this study. Selected participants (n=8) in the 2014 ALEC Namibia study abroad program were purposefully included in this study because of their recent international high-impact experience. To ensure that participants chosen for the P-set represented multiple viewpoints, students were chosen from multiple universities, majors, gender, ethnicity, and classification. Demographic data for participants selected for the P-set are displayed in Table 3.

Table 3.

*Demographic characteristics of P-set (N=8)*

Demographic characteristic	n
<i>Gender</i>	
Male	1
Female	7
<i>Classification</i>	
Sophomore	2
Junior	2
Senior	4
<i>Major</i>	
Animal Science	3
Agricultural Communications and Journalism	3
Agricultural Leadership and Development	2
Agricultural Economics	1
<i>University</i>	
Texas A&M University	6
Prairie View A&M University	2
<i>Ethnicity</i>	
White	4
Hispanic	2
African American	2

### *Q Sort*

Q sort is a data collection tool used in Q Methodology, which is an alternate form of factor analysis used when data needs to be analyzed in an intra-individual setting (Stephenson, 1953). Q sort (Brown, 1996) involves the systematic ranking of statements by individuals in the sample. Respondents will arrange statements that they agree or disagree with into a “forced normal distribution,” comprising a continuum of statements most like or most unlike them (Peritore, 1989). Brown (1996) describes the Q sort:

The instrumental basis of Q methodology is the Q-sort technique, which conventionally involves the rank-ordering of a set of statements from agree to disagree. (Brown, 1996; p. 561)

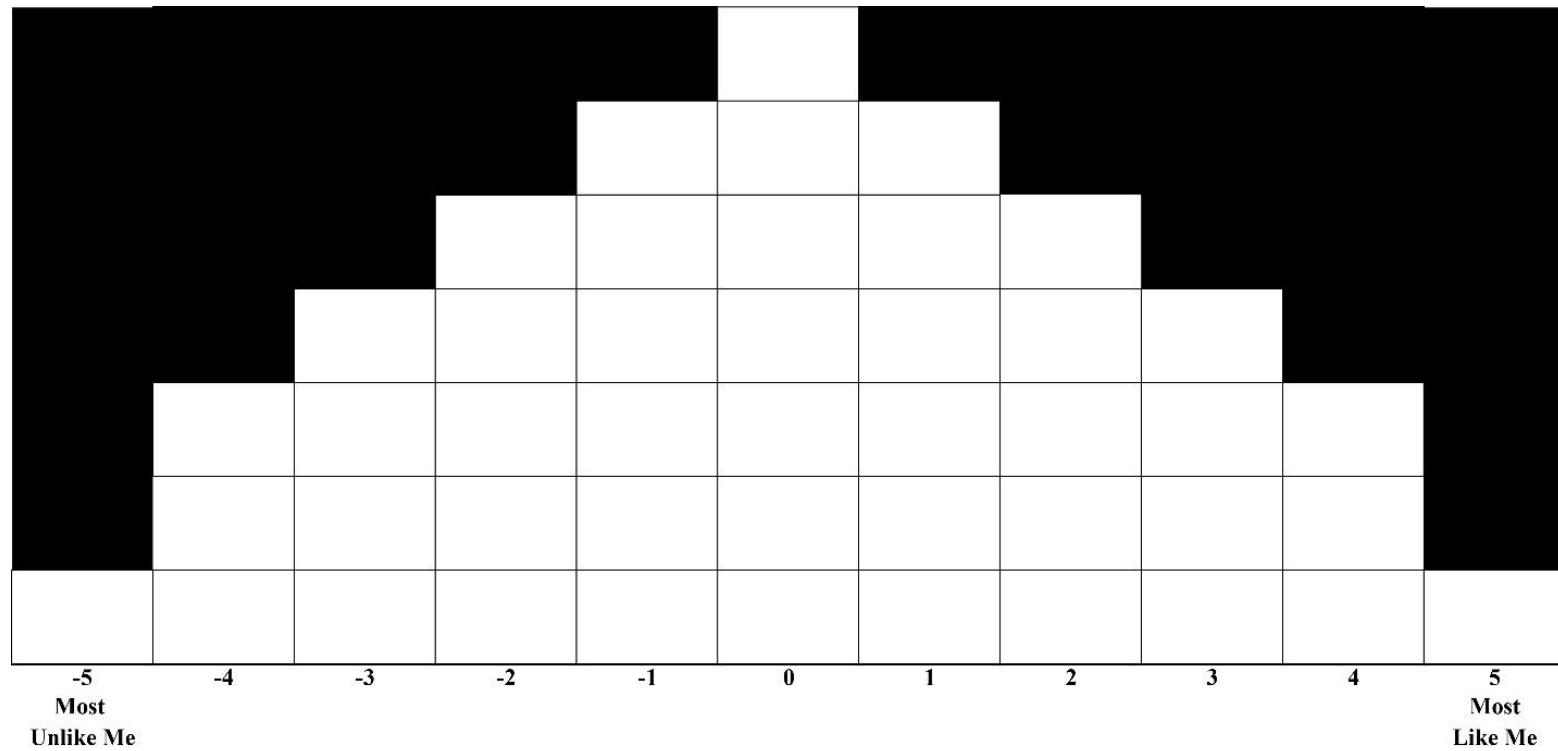
Q sorts require the participants of the P-set to sort statements in the Q-set into a forced distribution (van Exel & de Graaf, 2005; Watts & Stenner, 2012). Watts and Stenner (2012) note that the distribution should include positions numbered in the distribution from a negative to a positive, depending on the number of items in the sort and the nature of the problem. Topics that are straightforward in nature or that involve participants who have a high level of expertise about the subject should utilize a more platykurtic distribution, to allow for opportunity to make delicate discriminations regarding the items in the sort (Brown, 1980; Watts & Stenner, 2012). In this study, participants in the P-set have a high degree of knowledge about the nature of changes in students after study abroad; indeed they had just completed participation in a study abroad program. To capture their expertise on the subject via delicate and detailed

decisions in the sort, a forced distribution of -5 to +5 was utilized, including single choices at the extremes to support a platykurtic distribution of the 45 items in the Q-set. The distribution utilized in the Q sort in this study is displayed in figure 3.

In implementing the Q sort, Watts and Stenner (2012) recommend that participants be asked to sort statements initially into three categories: category one, which includes statements that the participant feels positive about; category two, which includes statements the participant feels negative about; and category three, which is comprised of remaining statements including those that the participant is unsure about. Then, the participant is asked to sort each category into the distribution. Once a category has been sorted in its entirety, the next category is sorted into the distribution. This allows the researcher to note how many items were sorted into each category, and offering clues for interpretation as to the negative or positive valuation of items in each individual Q sort.

This study followed Watts and Stenner's (2012) recommendations for implementing Q sorts. Participants acknowledged informed consent, then were given instructions to sort items relative to their study abroad experience. Participants were asked to read through all items in the Q sort, and then sort them into three categories, one for "definitely like me," one for "definitely not like me," and one for items that they were unsure about. Participants then sorted each category into the distribution. Upon completion of the sort, participants were asked to talk about why they chose items in the





*Figure 3.* Q sort distribution.

extreme position, and additional observations about the nature of their sort were collected for use in interpretation of results.

### *Data Analysis*

Cross (2005) affectively paraphrases Stainton Rogers, Stenner, Gleesen, and Stainton Rogers (1995) with regards to the analysis of data generated by a Q sort:

Analysis of the responses then takes place. Q methodology employs a particular form of multivariate analysis, in order to identify and describe the different ‘stories’ that can be told about a particular topic or issue—it usually does this by examining the way people respond in systematically different ways to propositional samples of discourse (Stainton Rogers et al., 1995), (Cross, 2005, Section 6- How ‘Q’ is carried out, para. 5).

This is accomplished by completing a factor analysis, defined by Field (2009) as a technique used “for identifying groups or clusters of variables.” Factor analysis is used to understand the structure of a set of variables (Field, 2009). Essentially, researchers search for clusters of closely correlated sorts, which signify interrelated variables, and reduce the entire set of variables into a smaller set of factors. Field describes the reason for such analysis:

By reducing a data set from a group of interrelated variables into a smaller set of factors, factor analysis achieves parsimony by

explaining the maximum amount of common variance in a correlation matrix using the smallest number of explanatory concepts. (Field, 2009; p. 620)

In this study, data from the Q sort was analyzed using the PQ method software. Principal Component Analysis was used to calculate an unrotated factor matrix. The Kaiser-Guttman rule dictates that factors with an eigenvalue of 1.0 or higher should be extracted (Watts & Stenner, 2012). Field (2009) also notes that Eigenvalues should be used in determining which factors to extract. Such rules were a primary guide in determining which factors to extract, however, as Brown (1996) and Watts and Senner (2012) note, objective and inflexible rules of extraction may lead to the extraction of superfluous factors or failure to extract a meaningful factor. Watts and Stenner (2012) further recommend that a workable solution for factor extraction be meaningful and sensitive to the theoretical design, and responsive to the emergent nature of Q methodology. Therefore, this study relied on the Kaiser-Guttman rule for initial review and then further investigation of shared variance and unrotated factor loadings from the unrotated factor matrix to determine a workable solution for extraction.

The next step in data analysis was factor rotation. Conceptually, factor rotation involves a process of mathematically magnifying the differences and similarities between each factor (Watts & Stenner, 2012). This can be visualized by imagining that each factor is a unique viewpoint that can be represented graphically in a concept space. If you were to graph the location of each individual sort's factor loadings with factor 1

serving as the X axis and factor 2 serving as the Y axis, you would get a graphical representation of those factors from the perspective of factor 3 (Watts and Stenner, 2012). To get a clearer picture of what makes those factors unique, you could “rotate” those factor loadings so that the plots align more closely to the axis, thereby magnifying that which makes each factor unique and enabling us to further interpret each factor. Brown (1996) notes that there are multiple options for implementing factor rotation, according to the needs of the study: “Once the original factors have been extracted, the analyst has the option of rotating them either by Varimax criteria, or judgmentally according to theoretical considerations.”

To complete factor rotation, the study employed a technique called Varimax factor rotation. Watts and Stenner (2012) describe Varimax factor rotation as ideal for studies that are interested in the majority viewpoints of the group, and note that this technique typically guides a researcher to a workable factor solution automatically. Rather than relying on researcher judgment, as in a by-hand rotation, Varimax rotation implements mathematical criteria to arrive at a mathematically sound solution for rotation.

After rotation, individual sorts that most closely associate with each factor are “flagged” as defining sorts for the factor (Schmolck, 2014) allowing the statements in defining sorts to be summarized by a hypothetical sort that would best typify the viewpoint of each factor, measured by calculating a Z-score for each statement in each

factor to enable comparisons of statement placement across factors. This process was described by Schmolck (2014).

The individual sorts that were "flagged" by the user as the best representatives of the factor are aggregated or "averaged" into one set of statement scores. The exact computational procedure consists in first z-standardizing every sort, and then applying different weights for every sort depending on the sort's factor loading, and computing the weighted average. Finally, every factor score is z-standardized again, i.e. every factor score has the same mean (0) and standard deviation (1), and hence scores are directly comparable across factors. (Schmolck, 2014, Section 7- QAnalyze, para. 10).

Z-scores for each statement across each sort will be used to assist in interpreting data from factor arrays created for each factor based on defining sorts. Distinguishing statements, or statements that are statistically different in placement in the factor array from one factor to another, will be used to construct final characterizations of the viewpoint of each factor.

Final factor analysis and interpretation was implemented based on theoretical frameworks, the review of literature, demographic and psychographics of the P-set, and

researcher expertise from practical experience, as recommended by Watts and Stenner (2012).

### **Objective Three**

The third objective of the study is to synthesize data collected in the first three objectives in creation of a model to explain the manifestation of change in students after participation in a study abroad program.

Models are used to illustrate connections and interpret the behavior of a system (Morecroft, 1985). Morecroft and van der Heijden (1992) suggest that this is done by pooling knowledge into an illustrative framework, accomplished by first identifying a problem, second assembling a team of experts, and finally constructing a diagram based on field work.

In this study, a problem was identified and a team of experts was assembled to review qualitative data collected from objective two. Data collected from objectives one and two will constitute the field work suggested by Morecroft and van der Heijden (1992). To complete this objective, data will be synthesized and searched for connections and potential behavior, in conjunction with the team of experts and the theoretical framework, to illustrate the connections and pooled knowledge through a graphical framework to aid in implementing the knowledge generated from this study in other programs and contexts.

## CHAPTER IV

### FINDINGS AND RESULTS

The purpose of this study was to develop a model to explain the viewpoints of student changes by students who participate in a study abroad experience. Findings are reported here specific to each objective.

#### **Objective One**

Semi-structured interviews were conducted to the point of data saturation (Lincoln & Guba, 1985). Data saturation was achieved at ten interviews. Descriptive characteristics of the sample are displayed in Table 4. Participants represented undergraduate and graduate students in majors including Agricultural Leadership, Education and Communications (ALEC), Agricultural Communications and Journalism (AGCJ), and Agricultural Business (AGBU), of both genders.

Data was mined for specific outcomes of study abroad. Three themes emerged from the data. Each theme was relevant to one of Kegan's (1994) domains of human development. Findings were constituted by outcomes specific to the intrapersonal domain, outcomes specific to the interpersonal domain, and outcomes specific to the cognitive domain.

Table 4.

*Descriptive characteristics of interview participants*

Participant	Study abroad cohort	Gender	Classification*	Major
IS1	2013	F	Graduate	ALEC
IS2	2013	M	Junior	AGCJ
IS3	2013	M	Sophomore	AGCJ
IS4	2013	M	Junior	AGCJ
IS5	2012	F	Senior	AGCJ
IS6	2013	F	Graduate	ALEC
IS7	2012	F	Senior	AGBU
IS8	2012	M	Junior	AGCJ
IS9	2013	F	Senior	AGCJ
IS10	2012	F	Junior	AGBU

*Note.* \*Classification at time of study abroad is reported.

*Intrapersonal Domain*

Outcomes specific to Kegan's (1994) intrapersonal domain of human development emerged. Braskamp et al. (2013) notes that intrapersonal domain encompasses both identity and affect. Identity is described as being characterized by an awareness of what makes an individual unique, and acceptance of demographic dimensions of an individual's identity. Braskamp et al. (2013) describe affect as an equivalent to an individual's emotional intelligence or emotional confidence.



This theme was represented in the data by statements that described outcomes specific how participants viewed themselves. The demographic dimensions of intrapersonal outcomes were noted by one participant (IS5) who stated:

I remember being on the trip. I was the only African American in the group. I was the only African American woman as well. So a lot of people there would ask me where I am from, figuring out, 'What race are you, are you Namibian, are you American?' I would tell them, 'No I am not, my parents aren't from Africa. I don't know how far back my roots go or if I tie to the area.' It was cool to have them call me out and have those discussions and those thoughts. (IS5)

Intrapersonal outcomes relative to emotional confidence or intelligence also emerged. This was characterized by statements that showcase confidence or emotional change, as one participant (IS7) noted, "It built me. I felt more confidence in myself. I have done this before, I can take negative feedback and it helped in that sense."

Overall, intrapersonal outcomes spanned multiple concepts and specific deliverables. Some saw improvements in financial skills; "It brings you back to reality that you do spend a lot of money on ridiculous things. I think I am more frugal since I have been back. I see that in

myself” (IS7). Others gained a propensity to travel; three participants (IS4, IS5, IS7) indicated that this study abroad program led them to go on a second study abroad program, while IS2 said, “I learned all this fun stuff, and I got back to a classroom and it’s like... Can I just have a major in study abroad?” IS 8 noted, “I feel like one thing is that it helped me to become more independent. After study abroad, I went on several trips by myself. Before I had only traveled with my family. After study abroad I didn’t need to rely on others for contentment.”

Still others grew in emotional intelligence; “I am more fearless now,” (IS9); and “I was a more mature person coming out of the trip that I was going into it,” (IS8). IS8 went on further to say, “I didn’t need to rely on others for contentment. I learned to be able to facilitate my own needs,” highlighting concepts of self-management and awareness.

### *Interpersonal Domain*

The second theme that emerged from interview data included outcomes that related to Kegan’s (1994) interpersonal domain, as typified by IS3, “My biggest growth was with people. You are with other people constantly, either from another culture or who you traveled with. Two people can look at the same thing and have a different opinion of it.”

Braskamp et al. (2013) notes that this domain is usually characterized by interdependence and concern for others, as well as engagement with others, especially those who are different.

Participants noted that many interpersonal outcomes are characterized by interdependence, as evidenced by one participant's (IS7) comment: "I think there are personal benefits that we get from study abroad. I had three weeks with new people and you've got to figure it out. I met great friends, and actually friends that I still talk to on a regular monthly basis." Another participant (IS4) noted, "There was a moment when I realized we were all friends. We all sat for an hour and a half, crying and laughing. That's when I realized how close we all were. We depended on each other to get through."

IS9 echoed, "Getting to go on a trip like that where you depend on people that you don't really know was a big adjustment and a big learning experience."

Interdependence was also characterized by civil disagreement for the greater good. IS3 noted the need for growing in conflict management, "I learned how to deal with people in a different way. Before I was hesitant to confront people and tell people no." IS7 said, "There are people that have differing viewpoints and ideas, and you come more patient. You have to decide that this is not your place to interject." IS1

echoed, “I have a low tolerance for certain things in people. I tried to not let that show as much. I have an awareness of that and how to handle people.”

Along this vein, IS8 noted, “I was on a trip with fourteen other people the entire time. I don’t consider myself much of a people person and I thought, ‘How am I not going to kill everybody by the end of the trip?’ I learned ways to be adaptable and work with other people.”

In addition, interpersonal outcomes were characterized by engagement. (IS5) noted:

We had a group of students who come from different backgrounds and cultures and we also have persons of authority, graduate students, undergrads, and our professors as well and everybody brought their own perspectives to the group, their own beliefs, and their own knowledge. Even with that there were some struggles within the group. We had to work together. (IS5)

Also relative to engagement, IS 6 said, “I am more comfortable with people. When you engage with other cultures, you are more comfortable with your own.” IS10 also echoed the engagement aspect with other cultures, “I am a relator. I can relate to

those from another country or those that have been in another country. I relate better now.”

IS10 succinctly captured engagement: “I expected differences, but there were similarities too.” Each of these characteristics were manifested in the outcomes associated with the interpersonal domain.

### *Cognitive Domain*

Braskamp et al. (2013) describe the cognitive domain as being characterized by knowing and knowledge, where knowing is comprised by complexity in making judgments and decisions about truth and importance as well as how information is learned, and knowledge is comprised by understanding issues and awareness of or proficiency in global concerns. Outcomes related to both knowing and knowledge were articulated by interview participants.

IS1 noted the concept of increasing complexity, “Working on an international research project. It was [another student’s] first grad school assignment. I realized how much I had grown. I learned to clarify when needed. I thought about how I can adjust my teaching.”

As for judgments and decisions, IS10 noted, “When I got back, that is when I started making decisions that were important to me, not just making decisions because of what was expected of me.”

Methods of knowledge gain were also typified in this theme. IS3 said, “I think about it a lot. I appreciate school more now. It makes me want to attend class to learn and not just get the grade.” IS8 described a revelation in learning styles:

I am a very kinesthetic learner and I learn by doing. This program helped me do that and it was a great process to practice that. Before I went, I had more formalized classroom learning experiences. Once I got to Namibia, it reaffirmed for me that yes, I can learn in a classroom, but it showed me that there is a better more practical way of learning, through experience. (IS8)

IS8 further described the concept of knowing, “I think that I learn by doing and being thrown into a situation where I had to do and being in close quarters with so many people for such a compact period really pushed me to learn those sort of skills.” This learning style assessment was congruent with the views of IS9, who said, “I am very kinesthetic. I have to be moving to learn something. Sometimes it was hard to learn but it was an experience in itself. We were out getting our hands dirty and interacting with it.”

IS5 extended this theme to instructors as well as students, “Study abroad trips to me are not about us taking a vacation. It’s a learning process for both students and teachers.”

Regarding understanding issues of global concern, IS1 stated, “I always went into the trip with the traditional Ag sense, like dairy and crops, but the other components like water and different crops were insightful. I learned a lot.” IS6 echoed, “I definitely have been able to increase my knowledge of southern Africa, definitely increased knowledge of cultural sensitivity, and photography, and more knowledge of landscape and trans-boundary issues.”

These characterizations of knowing and knowledge helped define the cognitive domain.

### *Specific Outcomes*

Through constant comparison, three themes emerged. In addition to typifying these themes, it was essential to the purpose of the study to identify specific outcomes of study abroad. As such, each outcome statement from all the interviews that identified a specific outcome was arranged into one of the three themes. A systematic coding process compared each statement against the others until a complete list of outcomes was created. Those outcomes were assigned a unique number for later use in objective two, and are reported along with their thematic categorization in Table 2.

### **Objective Two**

The second objective of the study was to explain the variance in the factors identified in objective one between subjects who participate in a study abroad. Participants were observed during the Q-sort process to document the nature of their categorizations and sorting. Participants initially sorted statements into piles for three

categories, “Definitely like me,” “Definitely not like me,” and unsure. Table 5 displays the results of that observation.

Table 5.

*Initial categorization of items for each sort*

Sort	Items “definitely like me”	Items “Definitely not like me”	Unsure
Q1	23	7	15
Q2	15	17	13
Q3	17	8	20
Q4	17	8	20
Q5	22	4	19
Q6	18	12	15
Q7	19	1	25
Q8	32	2	11
Total	163	59	138
M	20.37	7.37	17.25

Participants were also interviewed about their thought process as they were sorting and upon completion of the sort. These observations and interviews are to be used to aid in interpreting results of the factor analysis. Themes from these interviews



show that participants were generally positive about the Q sort experience and viewed it as an opportunity to reflect on their experiences. Q6 noted “This is like chess with feelings.” Q2 expressed the positive nature of the sort process, “Everyone should do one of these after a study abroad.” Additionally, participants believed that many of the statements described their viewpoints accurately, leading to some challenge with the forced distribution; Q1 said, “Finding the most like me was harder than finding the least like me. I feel like they are all like me.” These statements were used to aid in interpreting factor analysis results.

Q-Sorts were entered and analyzed in PQMethod software package for analysis. Each of the 8 Q-sorts is included in Appendices C-J. Table 6 shows the intercorrelation coefficient matrix, indicating association between individuals’ sorts. Strong positive relationship can be identified between Q2 and Q6, Q5 and Q6, and Q5 and Q8.

Table 6.

*Q-Sort Intercorrelation Matrix*

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Q1	100							
Q2	33	100						
Q3	41	18	100					
Q4	-3	33	11	100				
Q5	39	16	39	35	100			
Q6	32	50	5	36	56	100		
Q7	23	-27	-1	-12	18	15	100	
Q8	26	3	30	39	52	12	17	100

Table 7 shows the unrotated factor matrix, which includes unrotated factor loadings, eigenvalues, and percentage of variance explained by each factor and cumulatively. These data are generated from a Principal Component Analysis as a method of factor extraction. Kaiser-Guttman Criterion suggest that we should extract four factors, which would explain 81% of the variance in sorts. However, unrotated factor loadings indicate that none of the Q sorts in the study loaded primarily on Factor 4. Since none of the unrotated Q sorts loaded on this factor, and as Brown (1980) notes, the Kaiser-Guttman criterion can lead to the inclusion of “spurious factors,” Factor 4 was not extracted in the solution. Both Q6 and Q7 appear to associate strongly with Factor 4, however, each of those sorts load higher on one of the first three factors. This holistic view of the data supports Watts and Stenner’s (2012) recommendation of

determining a workable factor extraction solution that is responsive and sensitive to the data. It should be noted that a four factor solution would explain 81% of the variance, while a three factor solution would only explain 67% of the variance. Although a four factor solution would explain more variance, the fact that no individual sort associates most strongly with Factor 4 is problematic and could be indicative of the presence of a higher standard error coefficient. As such, it is most acceptable and adequate to choose a three factor solution.

Table 7.

*Unrotated factor matrix*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Q1	0.62	0.28	-0.57	-0.10	0.27	-0.16	0.32	-0.02
Q2	0.52	-0.65	-0.37	-0.01	0.25	0.06	-0.26	0.17
Q3	0.53	0.21	-0.19	-0.66	-0.24	0.35	-0.09	-0.09
Q4	0.55	-0.42	0.57	0.05	0.15	0.31	0.28	0.02
Q5	0.81	0.19	0.17	0.08	-0.39	-0.21	0.03	0.25
Q6	0.69	-0.26	-0.15	0.55	-0.22	-0.03	-0.06	-0.27
Q7	0.16	0.73	-0.05	0.52	0.16	0.35	-0.11	0.08
Q8	0.61	0.32	0.51	-0.22	0.32	-0.26	-0.22	-0.11
Eigenvalues	2.78	1.47	1.13	1.07	0.55	0.48	0.32	0.19
% Variance Explained	35	18	14	13	7	6	4	2
% Cumulative Variance	35	53	67	81	88	94	98	100

Varimax rotation was performed on the three extracted factors via the PQMethod software package. A rotated factor solution is displayed in Table 8. Initial results from PQMethod excluded Q6 from any individual factor. Schmolck (2014) notes that the PQMethod software uses an algorithm to flag sorts in each factor based on whether the factor explains more than half of the common variance in the sort and whether or not the sort load significantly at the .05 level. Additionally, Schmolck cautions users that the selection of defining sorts for each factor “is a matter of reasoned judgment,” and “is *not* meant as a definitive statistical solution for that – notwithstanding the possibility that your own judgment turns out to greatly coincide with what the program suggests.” Following that recommendation, it was in the best interest of the data and solution to include more sorts for each factor. The rotated factor loading for Q6 on Factor 3 was logically similar to the defining sorts for Factor 3, so Q6 was manually flagged as a defining sort for Factor 3.

Table 8.

*Rotated factor solution*

Sort	Factor 1 Loading	Factor 2 Loading	Factor 3 Loading
Q1	0.88X	0.10	-0.01
Q2	0.299	0.86X	0.03
Q3	0.56X	0.03	0.21
Q4	-0.15	0.42	0.77X
Q5	0.52	0.06	0.67X
Q6	0.44	0.51X	0.32
Q7	0.44	-0.59X	0.09
Q8	0.23	-0.20	0.79X
No. of Defining sorts	2	3	3

*Note.* Factor loadings marked with an X indicate defining sorts for each factor.

The three factor solution produced reliability coefficients of higher than .88 in each of the three factors, indicating the solution is reliable. Composite reliability of each factor is displayed in Table 9.

Table 9.

*Reliability of factor solution*

	Factor 1	Factor 2	Factor 3
Composite Reliability	0.889	0.923	0.923

To further check the accuracy of a three factor solution, the degree to which each factor is correlated with other factors was calculated. Results of factor intercorrelation are displayed in Table 10. Schmolck (2014) notes that this measure is used to ensure that the solution does not include too many factors.

Over-factoring, i.e., rotating more factors than there exist distinct perspectives, results in conspicuously high factor score intercorrelations. A reasonable rule of thumb would not, except for well-founded reasons, accept a factor solution with factor score intercorrelations in the order of magnitude of the factor loadings of those sorts that appear suited to represent a factor. (Schmolck, 2014, Section 7-QAnalyze, para. 13)

Following Schmolck's recommendation, results of factor intercorrelation were checked against the factor loading scores of defining sorts for each factor.

Table 10.

*Intercorrelation between factors*

	Factor 1	Factor 2	Factor 3
Factor 1	1		
Factor 2	0.2776	1	
Factor 3	0.2738	0.2265	1

After factor rotation, it is possible to identify an arrangement of each statement that would create a perfect factor loading for that factor. Indeed, each factor represents a viewpoint that can be typified by a particular arrangement or sort of statements. This allows comparisons to be made about the arrangement of each statement in each factor's signature sort. The arrangement of each statement in each factor is displayed in Table 11. Statements like IE1 and C8 show near consensus across all three factors, returning neutral values in each signature sort, while C2 is sorted into polar opposites in a typical sort for Factors 2 and 3, while remaining neutral in a sort for Factor 1.

Table 11.

*Q-sort values for statements sorted by consensus vs. disagreement*

Statement	Q-sort Value for Factor 1	Q-sort Value for Factor 2	Q-sort Value for Factor 3
IE1	0	0	-1
C8	-1	0	-1
IA8	-1	-2	-3
C5	-1	-3	-2
IE2	0	0	-1
C4	3	4	3
IA15	0	-1	1
C13	-3	-3	-5
IA10	3	0	1
IE12	-1	-2	0
IE5	1	0	-2
IA11	2	1	-1
IA1	4	1	2
IA14	1	-1	3
IA13	-2	1	0
C10	2	-1	2
C6	2	-1	4
C1	1	3	-1
C7	1	5	3
C3	-4	0	0



Table 11. Continued

Statement	Q-sort Value for Factor 1	Q-sort Value for Factor 2	Q-sort Value for Factor 3
C11	-2	2	0
IA3	5	2	0
IE7	2	0	-2
IA7	2	3	-1
IA17	0	3	-2
IE3	4	1	0
IE9	0	-1	-4
IE10	-1	3	0
IA18	2	-3	1
IE4	-2	2	1
IA4	-4	0	1
IA12	1	1	-4
IE8	-3	-1	2
C12	-1	-4	2
IE14	0	-2	4
IE11	-2	4	3
IA9	3	-4	-3
IE6	-4	2	1
C2	0	-5	5

Further analysis of the rotated factors leads to the generation of a Z-score for each statement relative to each factor. Schmolck (2014) recommends using these Z-scores to make comparisons across the typified sort for each factor. Z-scores that were significantly different between factors for a statement indicate that the statement is a distinguishing statement for each factor (Watts & Stenner, 2012). Distinguishing statements for each factor as well as accompanying Z-scores are presented in the following tables. Table 12 displays distinguishing statements of Factor 1. Table 13 displays distinguishing statements of Factor 2, and Table 14 displays distinguishing statements for Factor 3.

Table 12.

*Distinguishing statements for Factor 1*

Statement number	Q-sort value	Z	Statement
IA3	5	1.83*	I am more confident in my skills and experiences
IE3	4	1.77	I am more comfortable interacting with people I don't know
IA10	3	1.17	I understand my strengths and abilities better
IA9	3	1.16*	I solidified/ clarified my career goals and interests
IE14	0	.15*	I listen more now
C2	0	.15*	I became more patient
C12	-1	-.37	I no longer jump to conclusions
IE11	-2	-.60*	I have a deeper appreciation for my family
C11	-2	-.89	I learned to prioritize activities now
IA13	-2	-1.04	I enjoy being outdoors more
IE4	-2	-1.1*	I communicate better with people I am close to
IA4	-4	-1.54*	I handle tension better
C3	-4	-1.69*	I reaffirmed an interest in international development as a passion/career
IE6	-4	-1.69*	I appreciate being alone more

Note. \* indicates  $p > .01$

Table 13.

*Distinguishing statements for Factor 2*

Statement number	Q-sort value	Z	Statement
C7	5	2.22*	I relate everyday experiences to my international experiences to make sense of them
IE10	3	1.37*	I seek others with international experiences
IA17	3	1.05*	I realized how small I am
C6	-1	-.36*	I look at decisions differently
C10	-1	-.56*	I am a more adaptable learner
IA18	-3	-1.09*	I am more fearless now
IE14	-3	-1.13*	I listen more now
C12	-4	-1.36	I no longer jump to conclusions
C2	-5	-1.86*	I became more patient

*Note.* \* indicates  $p > .01$

Table 14.

*Distinguishing statements for Factor 3*

Statement number	Q-sort value	Z	Statement
C2	5	1.95*	I became more patient now
IE14	4	1.49*	I listen more now
IE8	2	1.07*	I am more tolerant of others
C12	2	.95*	I no longer jump to conclusions
C1	-1	-.42	I understand international issues more
IA7	-1	-.63*	I feel more privileged now
IE5	-2	-.79	I can forge friendships quickly
IE7	-2	-.95*	People see me differently
IA12	-4	-1.59*	I try not to be too introspective
IE9	-4	-1.86*	I am less tolerant of certain traits
C13	-5	-2.0	I experienced depression when I got home

*Note.* \* indicates  $p > .01$

**Objective Three**

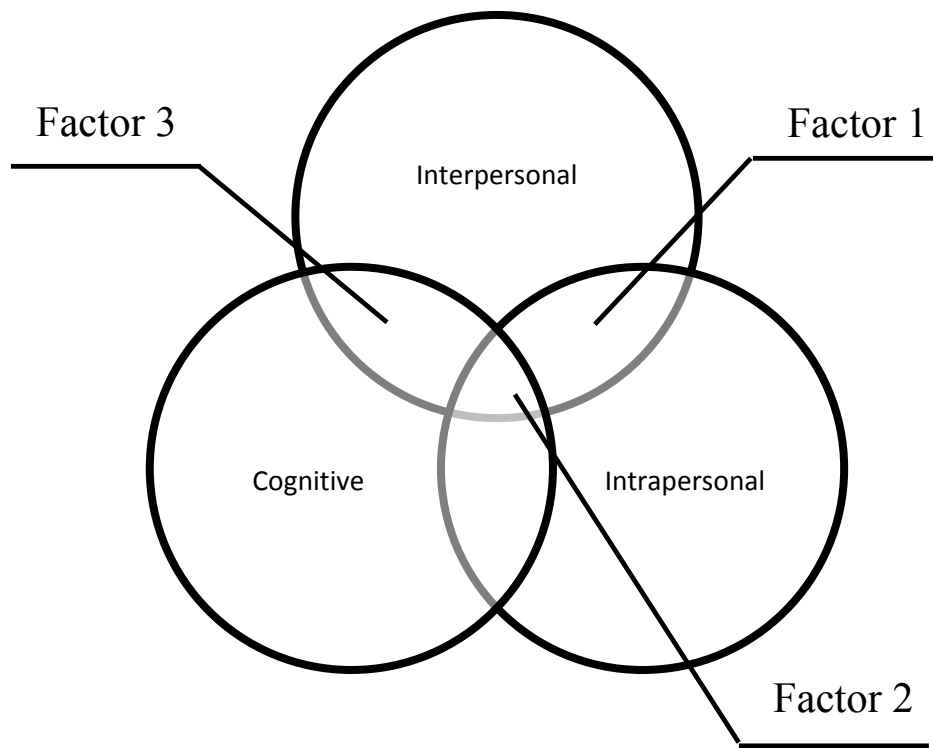
Objective three was to develop a model for change in international high-impact experiences utilizing themes generated from objective one and factor analysis from objective two.

Bandura (1974) described a triadic reciprocity between three dynamics: environment, personal factors, and behavior. Bandura also claims to support explanation of causation. In developing a model for student change, Bandura's social cognitive theory is especially meaningful. In operationalizing the dynamics of Bandura's model to elements of this study, environment is characterized by the nature of a study abroad program; the learning environment is altered significantly from a traditional classroom approach. As such, it would make sense that such a change in environment would elicit changes in behavior and personal factors. Those changes are manifested in the specific outcomes generated from interviews pursuant to objective one. Each outcome and theme showcases a deliverable, concrete change in student behavior or personal factors, attributable in Bandurian logic to a change in environment.

Kegan's (1994) model of human development indicates that there are three domains for human growth: Intrapersonal, Interpersonal, and cognitive. Kegan's model also notes the overlap and intersection of each of those domains, though the areas where those concepts intersect are neither explicitly defined in the model, nor casually discussed or described in the literature. In objective two, three distinct viewpoints were identified and analyzed through factor analysis and the Q method. The distinguishing characteristics of each factor are characterized by signature statements generated from objective one. Each statement is based on one of Kegan's domains.

Table 11 shows which statements were positively and negatively associated with each factor, and which domain each statement is associated with. Factor 1 is defined by

positive affiliations with statements that align theoretically with the Intrapersonal and Interpersonal domain. This indicates that Factor 1 characterizes the previously undefined overlap of those domains. Factor 2 is characterized by positive affiliations with statements that align theoretically with each of Kegan's three domains: Intrapersonal, Interpersonal, and Cognitive. This indicates that Factor 2 characterizes the previously undefined overlap of all three domains in the center of Kegan's model. Factor 3 is characterized by positive affiliations with statements that align theoretically with the Interpersonal and Cognitive domains. This indicates that Factor 3 characterizes the previously undefined overlap of those two domains. The conceptual location of these factors in Kegan's model is displayed in Figure 4.



*Figure 4.* Initial Conceptualization of adapted model of human development



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to develop a model to explain the viewpoints of student changes by students who participate in a study abroad experience. In meeting that purpose conclusions have been drawn regarding each objective.

#### **Conclusions**

##### *Objective One*

Objective one was to identify specific change outcomes in students' global perspectives through participation in a study abroad program. Outcomes were identified for each of Kegan's (1994) domains of human development. These outcomes were attributable to participation in a study abroad program. Just as Bandura (1986) notes that a change in environment elicits a change in behavior and personal factors, interview participants recognized the impact that a new learning environment had on their development. One participant (IS2) noted, "I feel better as a person. I have more knowledge. You come here and it's the same old thing. You go there and it's something completely new and completely different and that's good. New is good."

Further evidence that the outcomes identified in chapter three were attributable to study abroad is related to Bandura's (1986) suggestion that change in behavior can elicit change in personal factors and environment. One participant (IS3) noted, "I was absolutely impacted. It would be impossible not to. Especially given the tools we were given from instructors, like the assignments and stuff."

The study abroad program being investigated in this project featured several purposeful assignments, including intense group reflections designed to further enhance the experiences of students and allow them to internalize and conceptualize their experiences. These reflections and assignments are likely the genesis for observations noted above and the catalyst for similar causational implications.

Findings indicate that the outcomes that participants identified fit within Bandura's (1986) social cognitive theory, and those outcomes can be attributed to participation in a study abroad.

#### *Objective Two*

Table 5 shows the distribution of statements from each sort into categories "definitely like me," "definitely not like me," and unsure. All participants except one (Q2) sorted more items into the "definitely like me" pile than into the "definitely not like me" pile. Indeed, the mean for each category indicated that the central tendency was to sort more items into the "Definitely like me" pile ( $m=20.37$ ) than the "definitely not like me" pile ( $m=7.37$ ) or the unsure pile ( $m=17.35$ ). This indicated that the positive association of items likely extended beyond the center of the forced distribution. Watts and Stenner (2012) recognized the potential for such a phenomenon, and caution researchers not to assign negative value to an item that is assigned to a 0, -1, or -2 value in the final factor arrays; so it was with this data. In this case, Table 5 supports the idea that participants in the P set positively identified with many items in the Q-set, so much so that items that they sorted into a column with a negative value may in fact have been

items with which they positively identified. Q-sort interviews also supported such a conclusion, as evidenced with the idea that it was harder to find a single defining response for the +5 position than for the -5 position. This means when interpreting the final characterizations of each factor, caution was exercised to focus on the positive values, and negative interpretation of a characteristic was reserved for only the most extreme values (-4 and -5).

Q-sort interview statements that support the idea that the Q sort process was useful in helping students reflect on their study abroad experience and that such reflection was a positive experience were in line with accepted research about the importance of reflection in a study abroad program, both for student development (Harder, et al., 2012; Lamm, et al., 2011; Roberts & Jones, 2011) and student measurement, (Black et al., 2013). This was evidenced in comments from multiple participants. Q methodologies play an integral role in evaluating the inherently subjective elements of student development and meaning making (Brown, 1980; Stephenson, 1953). Participants in this study responded positively to the additional reflection and cognitive process of sorting statements: Q5 called the Q-sort process “Chess with feelings.” Q2 commented that, “everyone should do one of these after a study abroad.”

Table 6 displays the intercorrelation matrix between Q-sorts. Although some obvious relationships existed, as evidenced by the strong positive correlations between Q2 and Q6, Q5 and Q6, and Q5 and Q8, there were not overwhelming or obvious

patterns in the data. While some researchers may find this alarming, these data in fact supported the subtlety and significance of Q methodology. By nature subjectivity is somewhat unpredictable, and necessitated Stephenson (1953) to create a way to capture the richness and intimacy of operant subjectivity in a sound methodological structure (Watts & Stenner, 2012). These data support the conclusion that the final factor characterizations are subtle, yet still accurate, significant, and impactful in developing theoretical understandings of the way students change as a result of study abroad programs.

Discussion of the selection of a three-factor solution has already been included in the methods section, though such a solution warrants further discussion. The unrotated factor matrix displayed in Table 7 indicated that a four-factor solution would explain more variance and may have been a workable solution. Watts and Stenner (2012) urge researchers to rely on their own knowledge of the data set and the theoretical underpinnings of the topic to arrive at a solution, rather than the purely objective Kaiser-Guttman criteria method. While it would have been beneficial to explain more of the variance in this study, doing so would have compromised the validity of the factor characterizations. The purpose of this study was to explain the viewpoints of how students change. More viewpoints do not result in a deeper explanation; in fact, Stephenson (1996) argues that the opposite could be true. The solution presented in this study had three factors, each of which was supported by at least two defining sorts (displayed in Table 8), which increased reliability and minimizes error. Each factor also had reliability coefficients higher than .88, as shown in table 9. Finally, the low

intercorrelation of each factor, displayed in table 10 further supported the conclusion that a three-factor solution was responsive to the data, valid, and reliable. None of the intercorrelation coefficients came close to the factor loadings of the defining sorts. In fact, most correlations were less than half of the smallest defining sort factor loading. It was therefore concluded that characterizations of the factors in this solution are accurate explanations of viewpoints of how students change as a result of study abroad programs.

In interpreting the characteristics of each viewpoint of student change, both demographics and psychographics should be considered (Watts & Stenner, 2012). The following discussion will synthesize demographic and psychographic characteristics of each identified factor to better define and explain the viewpoint expressed in each factor.

#### *Factor 1*

Table 8 notes that for Factor 1, Q1 and Q3 loaded significantly and were flagged as defining sorts. Q1 and Q3 shared similar demographics in that they were both white female students studying at Texas A&M University with the same major (Agricultural Communications and Journalism). The demographic similarities in these participants supported the reliability of this particular viewpoint. Despite the similarities in demographics, the richness of data generated from Q methodology lies in the celebration and interpretation of holistic subjectivity (Stephenson, 1953). As such, much of the interpretation of the characteristics of each factor was focused on the psychographic profiles supported by the factor arrays presented in tables 12-14. Additionally, Table 6

notes that Q1 and Q3 had similar psychographics, as they had a strong positive correlation (.41).

Table 12 highlights the distinguishing characteristics of Factor 1. As noted earlier in this chapter, interpretation of these characteristics focused on the positive values, and the extreme negative values, as there may be ambiguity in the neutral values. The positive valued statements that define Factor 1 were IA3, “I am more confident in my skills and experiences;” IE3, “I am more comfortable interacting with people I don’t know;” and IA10, “I understand my strengths and abilities better.” These statements aligned theoretically with Kegan’s (1994) Intrapersonal and Interpersonal domain. In objective two, the orientation of this factor in an adapted model was presented as displayed in figure 4.

The fact that the positively valued statements in this viewpoint were all characterized by the notion of improvement in soft skills or abilities or the clarification of goal or interests began to paint a clearer picture of the psychographic profile presented by this viewpoint. Students who associated with this factor saw study abroad as an opportunity to further skills and feel improved and empowered when they return. Consideration of these psychographic characteristics, as well as the demographic characteristics of the defining sorts in this area led to the conclusion that Factor 1 is typified and characterized by confidence. Therefore, one major conclusion of this study was to augment Kegan’s (1994) model by defining the area of overlap between the Intrapersonal domain and the Interpersonal domain as “Confidence.” Deliverable

outcomes associated with increased confidence due to a study abroad program included the following skills: comfortable interaction, clarity in personal strengths and limitations, and enhanced communication.

### *Factor 2*

As noted in table 13, the defining sorts for factor 2 were Q2, Q6, and Q7. It is important to note that Q7 is a defining sort, but that it is negatively associated with the factor. This means that Q7 helps to define the viewpoint by characterizing the opposite views. These participants were female seniors. Hispanic students enrolled at Texas A&M University completed Q2 and Q7, while an African American student enrolled at Prairie View A&M University completed Q6. The differing demographics of participants flagged as defining sorts for this factor showed up in the variations of their perspectives of this viewpoint, as evidenced by the intercorrelations presented in table 6. Q2 and Q6 had a strong positive correlation, but Q7 appeared to be related to neither Q6 nor Q2. This further supports the finding that Q7 characterizes the opposite of this viewpoint, further clarifying the characterization and contributing to the validity and reliability, as evidenced by the reliability of .923 shown in Table 9. Therefore, the similarities and characteristics that define this viewpoint were rooted in the psychographics of these participants and the distinguishing statements for the factor.

One interesting psychographic similarity was that each of the defining sorts for this factor was completed by a participant with previous international experience, either from additional study abroad programs or from international residence. It may be that

the repeated international exposure evened and aggregated the development of these participants, as evidenced by the distinguishing statements in Table 13. Factor 2 was typified by positive values assigned to statements C7, “I relate everyday experiences to my international experiences to make sense of them,” IE10 “I seek others with international experiences,” and IA17, “I realized how small I am.” Each of these statements showed that this viewpoint is typified by making meaning from international perspectives.

Additionally, as noted in Figure 4, this viewpoint was associated with the each of Kegan’s (1994) three domains of human development, indicating that individuals who share this viewpoint showed balanced development, rooted in pragmatic reflection of perspectives and abstract conceptualization toward multiple contexts. Lastly, the negative values attributed to this viewpoint were equally balanced, showing negative value for statements in each of the three domains. Analysis of the psychographic profile and discussion of the balanced development in this viewpoint led to the conclusion that Factor 2 is typified by the term, “Contextualization”. Additional augmentation to Kegan’s (1994) model of human development reflected this conclusion by defining the area of overlap between all three domains in the center of the model as “Contextualization.” This viewpoint was characterized by deliverable outcomes including enhanced decision-making, comparison and pattern-recognition, and problem solving.



### *Factor 3*

As indicated by Table 8, defining sorts for Factor 3 were Q4, Q5, and Q8. As with Factor 2, the demographic characteristics of participants who created these defining sorts were varied. Q4 was a white female agricultural leadership and development senior enrolled at Texas A&M. Q5 was an African American male animal science senior enrolled at Prairie View A&M University. Q7 was a Hispanic animal science sophomore enrolled at Texas A&M. In terms of psychographics, Q4 was completed by a participant who has international residence experience, while Q5 and Q7 were completed by participants who had never been out of the United States of America prior to their international experience. In light of the lack of obvious connections in participant data, interpretation of the characteristics of the viewpoint represented by Factor 3 relied on the distinguishing statement identified in table 14.

Factor 3 was characterized by positive values for C2, “I became more patient now,” IE 14, “I listen more now,” IE8, “I am more tolerant of others,” and C12, “I no longer jump to conclusions.” Much was gleaned from the nature of these distinguishing statements, revealing a clear picture of the viewpoint characterized by Factor 3. For example, C2 was a key statement to interpreting the differences between this factor and the others. Table 11 displays each statement and the value in each sort, ranked in order of consensus to disagreement. It was noteworthy that C2 was at the bottom of this table, meaning it was the single most disagreed on statement across all three factors. Individuals who align with the viewpoint characterized by Factor 1 would assign a neutral ranking to C2 (0), while individuals who align with Factor 2 would assign a

negative extreme value (-5). Conversely, individuals who align with Factor 3 assign a positive extreme value (5) to C2. The polarizing nature of this statement was critical in operationalizing the viewpoint characterized by Factor 3.

The difference in the value of development of patience was of profound importance in this viewpoint, especially when compared to the other factor characterizations. A quick examination of the positively valued statements in this factor array revealed terms including patience, listening, and tolerance-- all characteristics embodied and described by teamwork or collaboration. This led to the conclusion that the viewpoint characterized by Factor 3 was described by the title, "Collaboration." It was also concluded that Kegan's (1994) model of human development should be further augmented to define the area of overlap between the interpersonal and cognitive domains as "Collaboration." Deliverable outcomes of this viewpoint included patience, tolerance, enhanced decision-making skills, and self-management.

### *Objective Three*

Figure 4 shows the orientation of each factor in terms of Kegan's (1994) model of human development. Conclusions related to Objective 2 indicated that these factors should be typified and defined as "Confidence," "Contextualization," and "Collaboration."

As suggested by Morecroft and van der Heijden (1992), data from the first two objectives was pooled with the theoretical frameworks and observations from the field, and then represented visually. Figure 5 shows a proposed model of student development

as a result of international high-impact experiences. Each factor was then defined in the appropriate place, and deliverable outcomes are identified to provide concrete take-away that complemented the theoretical components of the model. This model relied on the manifestation of causation implied by Bandura's (1974) social cognitive theory, as outlined in the findings for Objective 3, and the foundation of Kegan's (1994) model of human development. This model filled in undefined holes in Kegan's model, and serves as a graphical representation for an explanation of how students change as a result of a study-abroad program.

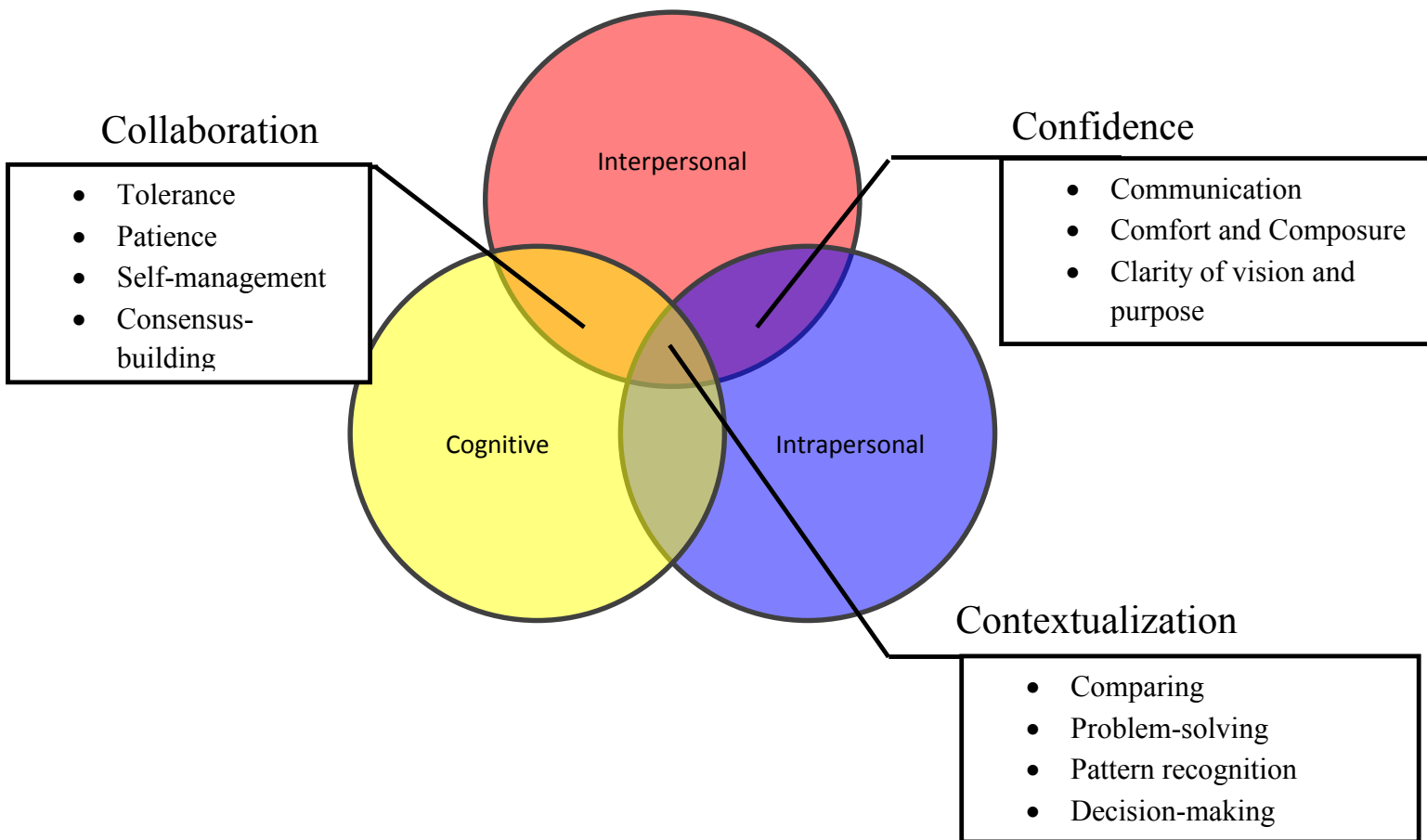


Figure 5. A model of student change as a result of an international high-impact experience.

## **Recommendations**

Practitioners should recognize that three distinct viewpoints exist regarding the way changes are manifested in students. One viewpoint suggests that students change by enhancing confidence, another suggest students enhance perspective, and a third suggests students change by enhancing collaboration skills.

Given the differences and subtle similarities across these viewpoints, it is essential to continue to plan activities and experiences that foster growth in each of these areas.

Activities that enable students to deliver in a public setting may further highlight enhanced confidence. Such activities can include presentations during the experience, or public showcases, oral summaries, or public recaps can allow for extended enhancement following in the vein of development in terms of confidence. This recommendation is supported by previous understandings of confidence development in study abroad programs (Zhai & Scheer, 2001).

When it comes to enhanced perspectives, deep reflection should continue to be central to an international high-impact experience. Such reflection should occur both individually and in a group setting. Those reflections should occur before, during, and after the experience. Additionally, any interactions between participants in the experience and other cultures or international collaborations should be encouraged, both during and after the experience. Such reflection is central to experiential learning

(Dewey, 1910/1997; Kolb, 1984), and recommended for study abroad programs (Harder *et al.*, 2012; Lamm *et al.*, 2011; Roberts & Jones, 2011).

Participants in the P-set noted that the Q-sort process was a positive reflection tool. Such cerebral exercises should be further implemented as both a tool for reflection and a measurement of operant subjectivity in other global learning settings.

As for enhancing collaborative skills, practitioners should continue to utilize team-based learning assignments, and bring together participants from diverse backgrounds, ethnicities, classifications, and additional demographic and psychographic characteristics. This recommendation furthers the call of researchers and practitioners to diversify recruitment efforts in study abroad programs (NSSE, 2010; Sweeney, 2013).

Initial findings related to objective two indicated that there was potential for a four-factor extraction solution as a part of factor analysis in this study. Even though the data did not warrant further investigation of the potential for a fourth factor at the risk of increasing error and basing conclusions on a single defining sort, the theoretical implications of the presence of a fourth factor are noteworthy. The model resulting from this study leaves one area undefined. Further study should continue this methodology, future studies could utilize the same concourse and Q-set in new P-sets with a greater number of participants to determine if a fourth factor could be introduced to explain a larger amount of variance. Watts and Stenner (2012) note that profoundly important conclusions can be drawn from small sample sizes in Q methodology. However, a larger

sample size might provide the missing elements needed to support a workable four-factor solution and complete the model.

Additional testing of this model should be done in other study abroad programs, as well as high-impact experiences conducted domestically. Just as Kegan (1994) posited that humans develop fundamentally within the three domains presented, this study suggests that students develop knowledge, skills, and abilities in a similarly predictable and explainable manner. That development certainly occurs in other settings. This model should be tested and applied in those settings.

Practitioners should avoid limiting definitions of student change to performance on surveys like the GPI or other measures. Such inquiries are myriad and purport to explain changes in student development (Carlsen et al., 1991), however, as this study suggests, those measures may be theoretically sound, the nature of student change is more complex and subjective than can be accurately captured by such methods. By only investigating student change with traditional qualitative methods, unanswered questions about the manifestation of change would linger.

Universities should continue to facilitate opportunities for global learning. This recommendation supports the body of knowledge concerning the benefits of global learning and the complex nature of global learning (Carlsen et al., 1991; Farrell & Suvedi, 2002; Hovland, 2009). The ALEC Department, the College of Agriculture and Life Sciences, and Texas A&M University have committed to global experiences for our students. This study suggests that those efforts should continue and be further

encouraged. Global learning does indeed change students. Now, armed with a clearer understanding of *how* students change, practitioners are better able to be responsive to the needs of students in recruiting and facilitating these experiences. Just as Dewey (1938) noted nearly a century ago, all education is experiential but not all experiences are educational, so it is with global learning. Now we know how students change. Let us employ this model and this knowledge toward meeting the call of building meaningful experiences for our students in an international setting with renewed vigor and purposeful approaches toward the development of confidence, perspective, and collaboration.



## REFERENCES

- Aboagye, E. (2011). Study abroad, global learning & global experiences. *Global Citizen Digest*, 13.
- Abrams, I., & Hatch, W. R. (1960). *Study abroad: New dimensions in higher education*. Washington, DC: Government Printing Office.
- Bandura, A., (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, CA: PrenticeHall.
- Bandura, A., (1999). Social cognitive theory: An agentic perspective. *Asian Journal of Social Psychology*, 2(1). 21-41.
- Black, C., Moore, L., Wingenbach, G., & Rutherford, T. (2013). Selected students' perspectives on international service-learning: A case study in Chajul, Guatemala. *Journal of International Agricultural and Extension Education*, 20(2), 7-19.
- Bolen, M. C. (2007). *A guide to outcomes assessment in education abroad*. Carlisle, PA: Forum on Education Abroad.
- Braskamp, L. A., Braskamp, D. C., Engberg, M. E., (2013). *Global perspective inventory (GPI): Its purpose, construction, potential uses, and psychometric characteristics*. Chicago: Global Perspectives Institute.
- Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. New Haven, CT: Yale University Press.
- Brown, S. R. (1993). A primer on Q methodology. *Operant subjectivity*, 16(3), 91-138.

- Brown, S. R. (1996). Q methodology and qualitative research. *Qualitative Health Research*, 6(4), 561-567.
- Carlsen, J. S., Bum, B. B., Useem, J., Yachimowicz, D., (1991). *Study abroad: The experience of American undergraduates in Western Europe and the United States*. New York: Council on International Educational Exchange.
- Chieffo, L., & Griffiths, L. (2004). Large-Scale assessment of student attitudes after a short-term study abroad program. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 10, 165-177.
- Coolidge, F., (2006). *Statistics: A gentle introduction*. Thousand Oaks, CA: Sage Press
- Cross, R. M. (2005). Exploring attitudes: the case for Q methodology. *Health Education Research*, 20(2), 206-213. Retrieved from <http://her.oxfordjournals.org/content/20/2/206.long>. Accessed September 26, 2014
- Day-Vines, N., Barker, J. M., & Exum, H. A. (1998). Impact of diasporic travel on ethnic identity development of African American college students. *College Student Journal*, 32, 463-471.
- Dewey, J. (1938). *Experience and education*. New York: Simon and Schuster.
- Dewey, J. (1910/1997). *How we think*. Mineola, New York: Dover Publications.
- Đoàn, T. M. (2002). *Asian American students: Study abroad participation, perspectives and experiences* (Master's Thesis). Available from <http://umabroad.umn.edu/assets/files/PDFs/ci/MSAG/AsianAmericans.pdf>

- Doerfert, D. L. (Ed.) (2011). *National research agenda: American association for agricultural education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.
- Durning, D. (1999). The transition from traditional to postpositivist policy analysis: A role for Q-methodology. *Journal of Policy Analysis and Management*, 18(3), 389-410.
- Engle, L., & Engle, J. (2003). Study abroad levels: Toward a classification of program types. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 9(1), 1-20.
- Farrell, P., & Suvedi, M. (2003). Studying abroad in Nepal: Understanding impact on student's lives. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 9, 175-188.
- Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.
- Foshay, A. W. (1991). The curriculum matrix: Transcendence and mathematics. *Journal of Curriculum and Supervision*, 6(4), 277-93.
- Foster, D. D., Rice, L. L. S., Foster, M. J., & Barrick, R. K. (2014). Preparing agricultural educators for the world: Describing global competency in agricultural teacher candidates. *Journal of Agricultural Education*, 55(1), 51-65.
- Gould J. A., & Mulvaney, R. J. (2007). *Classical philosophical questions (12th ed.)*. Upper Saddle River, NJ: Pearson.
- Harder, A., Lamm, A., Roberts, T. G., Navarro, M., & Ricketts, J. (2012). Using a preflective activity to identify faculty beliefs prior to an international

- professional development experience. *Journal of Agricultural Education*, 53(4), 17-28.
- Hovland, K. (2009). Global learning: What is it? Who is responsible for it. *Peer Review*, 11(4), 4-7.
- Institute of International Education, (2013). *Open doors*. Retrieved from:  
<http://www.iie.org/Research-and-Publications/Open-Doors/Data/US-Study-Abroad>
- Jackson, J. (2006). Ethnographic pedagogy and evaluation in short-term study abroad. *Languages for Intercultural Communication and Education*, 12, 134.
- Joplin, L. (1981). On defining experiential education. *Journal of Experiential Education*, 4(1), 17-20.
- Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, MA: Harvard University Press.
- Kelley, C., & Meyers, J. (1995). *CCAI: Cross-cultural adaptability inventory*. Minneapolis, MN: National Computer Systems.
- King, M. L., Jr. (1948). The purpose of education. *The Maroon Tiger*- Morehouse College.
- King, P., & Baxter Marigold, M., (2005). A developmental model of intercultural maturity. *Journal of College Student Development*, 571-592.
- Kuh, G. D. (2008). *Excerpt from "High-impact educational practices: What they are, who has access to them, and why they matter"*. Association of American

- Colleges and Universities. Retrieved from: <https://www.aacu.org/leap/hips>. Accessed on September 26, 2014.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Upper Saddle River, NJ: Prentice Hall.
- Lamm, A. J., Cannon, K. J., Roberts, T. G., Irani, T. A., Snyder, L. J. U., Brendemuhl, J., & Rodriguez, M. T. (2011). An exploration of reflection: Expression of learning style in an international experiential learning context. *Journal of Agricultural Education*, 52(3), 122-135.
- Landau, J., & Moore, D. C. (2001). Towards reconciliation in the motherland: Race, class, nationality, gender, and the complexities of American student presence at the University of Ghana, Legon. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 7, 25-60.
- Lee, L. (2011). Blogging: Promoting learner autonomy and intercultural competence through study abroad. *Language Learning & Technology*, 15(3), 87-109.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage.
- Merriam, S. (2009). *Qualitative research: a guide to design and interpretation*. San Francisco: Jossey-Bass.
- Moore, D. (1990). "Experiential education as critical discourse." In *Combining service and learning: A resource book for community and public service volume 1*. J. Kendall and Associates. Raleigh, NC: National Society for Internships and Experiential Education.

- Morecroft, J. D. W. (1985). The feedback view of business policy and strategy. *System Dynamics Review*, 1(1), 4–19.
- Morecroft, J. D. W., & van der Heijden, K. A. J. M. (1992). Modelling the oil producers—Capturing oil industry knowledge in a behavioural simulation model. *European journal of operational research*, 59(1), 102–122.
- Ng, H. (2003). *Sojourners' truth: Intergenerational conflict and racial identity attitudes among second generation Asian American participants in college study abroad programs in Asia* (Unpublished doctoral dissertation). Wright Institute, Berkeley, CA.
- National Survey on Student Engagement. (2013). *Annual report*.  
[http://nsse.iub.edu/html/annual\\_results.cfm](http://nsse.iub.edu/html/annual_results.cfm). Accessed on September 26, 2014.
- National Survey on Student Engagement. (2012). *Annual report*. Retrieved from:  
[http://nsse.iub.edu/NSSE\\_2012\\_Results/pdf/NSSE\\_2012\\_Annual\\_Results.pdf](http://nsse.iub.edu/NSSE_2012_Results/pdf/NSSE_2012_Annual_Results.pdf).  
 Accessed on September 26, 2014.
- National Survey on Student Engagement. (2011). *Annual report*.  
[http://nsse.iub.edu/NSSE\\_2011\\_Results/index.cfm](http://nsse.iub.edu/NSSE_2011_Results/index.cfm). Accessed on September 26, 2014.
- National Survey on Student Engagement. (2010). *Annual report*.  
[http://nsse.iub.edu/NSSE\\_2010\\_Results/index.cfm](http://nsse.iub.edu/NSSE_2010_Results/index.cfm). Accessed on September 26, 2014.
- Patton, M. Q. (2002). Qualitative interviewing. *Qualitative Evaluation and Research Methods*, 2, 280-284.

- Perkins, J. A. (1979). Report of the president's commission on foreign language and international studies. *Foreign Language Annals*, 12(6), 457-464.
- Peritore, N. P. (1986). Field notes on the use of Q-Methodology in a study of the Brazilian left. *Operant Subjectivity*, 1(10), 10-20.
- Redden, E. (2010). Academic outcomes of study abroad. *Inside Higher Ed*, 13.
- Rhodes, G., Loberg, L., & Hubbard, A. (2014). Historical, philosophical, and practical issues in providing global learning opportunities through study abroad. *New Directions for Student Services*, 2014(146), 5-13.
- Roberts, T. G. (2006). A philosophical examination of experiential learning theory for agricultural educators. . *Journal of Agricultural Education*, 47(1), 17.
- Schmolck, P. (2014). *PQMethod manual*. Retrieved from <http://schmolck.userweb.mwn.de/qmethod/pqmanual.htm>. Accessed on October 3, 2014.
- Sharp, K. R., & Roberts, T. G. (2013). Using a study abroad experience as the stimulus to globalize the secondary agricultural education curriculum. *Journal of International Agricultural Extension Education* 20(1), 47-58.
- Stephenson, W. (1953). Correlating persons instead of tests. *Journal of personality*, 4(1), 17-24.
- Stimson, R. W. (1919). *Vocational agricultural education by home projects*. The Macmillan Company.
- Sweeney, K. (2013). Inclusive excellence and underrepresentation of students of color in study abroad. *Frontiers: the Interdisciplinary Journal of Study Abroad*, 22. 1-21.

Texas A&M College of Agriculture & Life Sciences, (2013a). *Grand challenges*.

Retrieved from <http://aglifesciences.tamu.edu/about/grand-challenges/>. Accessed on September 26, 2014.

Texas A&M College of Agriculture & Life Sciences Grand Challenge FOW Sub

Committee, (2013), *Feeding our world: Grand challenge white paper*. Retrieved from [https://aglifesciences.tamu.edu/wp-content/uploads/2014/02/Feeding-Our-World-wp\\_reduced.pdf](https://aglifesciences.tamu.edu/wp-content/uploads/2014/02/Feeding-Our-World-wp_reduced.pdf). Accessed on September 26, 2014.

Texas A&M Department of Agricultural Leadership, Education, and Communications, (2009). *Strategic plan*. Retrieved from <https://aglifesciences.tamu.edu/alec/wp-content/uploads/sites/16/2014/02/Combined-Final-Report.pdf>. Accessed on September 26, 2014.

Texas A&M Office of Institutional Assessment, (2013). *Global perspective inventory (GPI) 2012-2013 report*. Retrieved from <http://globalsupport.tamu.edu/GlobalSupport/files/ec/ecad5be3-aaad-4963-9ec1-ab6e23cd5418.pdf>. Accessed on October 3, 2014.

Texas A&M University (1999). *Vision 2020: Creating a culture of excellence*. Retrieved from <http://www.tamu.edu/vision2020/culture/>. Accessed on September 26, 2014.

Texas A&M Vision 2020 Mid Term Review Committee (2010). *Vision 2020 mid term review report*. Retrieved from <http://vision2020.tamu.edu/vision-2020-mid-term-review-report>. Accessed on September 26, 2014.



- Twombly, S. B., Salisbury, M. H., Tumanut, S. D., & Klute, P. (2012). *Study abroad in a new global century: Renewing the promise, refining the purpose, ASHE higher education report*. John Wiley & Sons.
- Van Exel, J., & de Graaf, G., (2005). *Q methodology: A sneak preview*. Retrieved from <http://Qmethod.org/articles/vanExel.pdf>. Accessed on October 3, 2013.
- Watts, S., & Stenner, P., (2012). *Doing Q methodological research*. Thousand Oaks, CA: Sage.
- Wingenbach, G. (PD), Rutherford, T. (Co-PD), & Redwine, T. (Co-PD) (2013-2016). Broadening students' experiences and expanding their career competencies through international experiential learning opportunities. NIFA Challenge Grants Program.
- Zhai, L., & Scheer, S. D. (2002). Influence of international study abroad programs on agricultural college students. *Journal of International Agricultural and Extension Education*, 9(3), 23-29.

# APPENDIX A

## IRB APPROVAL

DIVISION OF RESEARCH  
Research Compliance and Biosafety



**DATE:** September 19, 2014

**MEMORANDUM**

**TO:** Gary J Wingenbach  
ALRSRCH - Agrilife Research - Ag Leadership, Education & Communication

**FROM:** Dr. James Fluckey  
Chair  
Institutional Review Board

**SUBJECT:** Continuing Review - Approval

---

**Study Number:** IRB2013-0500D

**Title:** Broadening Students ' Experiences and Expanding Their Career Competencies through International Experiential Learning Opportunities

**Review Type:** Expedite

**Approval Date:** 07/17/2013

**Continuing Review Due:** 08/15/2015

**Expiration Date:** 09/15/2015

**Document of Consent:** Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

---

**Comments:** Enrollment of new subjects in progress

---

- This research project has been approved. As principal investigator, you assume the following responsibilities:
1. **Continuing Review:** The protocol must be renewed by the expiration date in order to continue with the research project. A Continuing Review application along with required documents must be submitted by the continuing review deadline. Failure to do so may result in processing delays, study termination, and/or loss of funding.
  2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB.
  3. **Unanticipated Problems and Adverse Events:** Unanticipated problems and adverse events must be reported to the IRB immediately.
  4. **Reports of Potential Non-compliance:** Potential non-compliance, including deviations from protocol and violations, must be reported to the IRB office immediately.
  5. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB for review. The Amendment must be approved by the IRB before being implemented.
  6. **Consent Forms:** When using a consent form or information sheet, you must use the IRB stamped approved version. Please log into IRIS to download your stamped approved version of the consenting instruments. If you are unable to locate the stamped version in IRIS, please contact the office.
  7. **Audit:** Your protocol may be subject to audit by the Human Subjects Post Approval Monitor. During the life of the study please review and document study progress using the PI self-assessment found on the RCB website as a method of preparation for the potential audit. Investigators are responsible for

750 Agronomy Road, Suite 2701  
1186 TAMU  
College Station, TX 77843-1186  
Tel. 979.458.1467 Fax. 979.862.3176  
<http://rcb.tamu.edu>

## APPENDIX B

### SEMI-STRUCTURED INTERVIEW PROTOCOL

#### Interview protocol

1. Tell me about your study abroad experience.
2. What were some of the highlights of your experience?
3. What are some ways that you were changed as a result of this experience?
4. When it comes to how you think, what you know, and how you gain knowledge, how did your experience impact you?
5. When it comes to your identity and self-knowledge, how did your experience impact you?
6. When it comes to social interactions and social responsibility, how did your experience impact you?
7. Think of a specific moment in your experience that led to a change in the way you think about something. Tell me about that moment, and about that change.
8. Think of a specific moment in your experience that led to a change in the way you view yourself. Tell me about that moment, and about that change.
9. Think of a specific moment in your experience that led to a change in the way you interact with other people. Tell me about that moment and about that change.
10. Overall, what factors of your program or international experiences in general led to changes in your life that you have noticed?

## Q-SORTS

## Namibia Qsort

**1: Q1**

+5	3 IA3								
+4	1 IA1	9 IA9	21 IE3						
+3	2 IA2	10 IA10	36 C4	42 C10					
+2	7 IA7	11 IA11	18 IA18	33 C1	38 C6				
+1	5 IA5	12 IA12	14 IA14	23 IE5	25 IE7	39 C7			
0	15 IA15	17 IA17	19 IE1	20 IE2	27 IE9	32 IE14	34 C2		
-1	28 IE10	29 IE11	30 IE12	37 C5	40 C8	44 C12			
-2	6 IA6	8 IA8	13 IA13	43 C11	45 C13				
-3	16 IA16	22 IE4	26 IE8	41 C9					
-4	4 IA4	24 IE6	35 C3						
-5	31 IE13								

Created by [PQM2mHTM](#) - 09-20-2014 17:46:59

## Namibia Qsort

**2: Q2**

+5	39 C7								
+4	17 IA17	29 IE11	36 C4						
+3	2 IA2	7 IA7	28 IE10	33 C1					
+2	3 IA3	5 IA5	12 IA12	22 IE4	24 IE6				
+1	1 IA1	10 IA10	11 IA11	13 IA13	21 IE3	43 C11			
0	4 IA4	15 IA15	19 IE1	20 IE2	23 IE5	25 IE7	40 C8		
-1	14 IA14	26 IE8	27 IE9	35 C3	38 C6	42 C10			
-2	6 IA6	8 IA8	16 IA16	32 IE14	37 C5				
-3	9 IA9	18 IA18	30 IE12	41 C9					
-4	34 C2	44 C12	45 C13						
-5	31 IE13								

Created by [PQM2mHTM](#) - 09-20-2014 17:46:59

## Namibia Qsort

### 3: Q3

+5	25 IE7								
+4	2 IA2	21 IE3	39 C7						
+3	1 IA1	5 IA5	7 IA7	38 C6					
+2	8 IA8	30 IE12	32 IE14	34 C2	40 C8				
+1	10 IA10	11 IA11	15 IA15	20 IE2	27 IE9	36 C4			
0	3 IA3	14 IA14	18 IA18	19 IE1	22 IE4	31 IE13	44 C12		
-1	4 IA4	6 IA6	17 IA17	23 IE5	26 IE8	37 C5			
-2	12 IA12	16 IA16	28 IE10	33 C1	43 C11				
-3	24 IE6	29 IE11	35 C3	42 C10					
-4	9 IA9	13 IA13	41 C9						
-5	45 C13								

Created by [PQM2mHTM](#) - 09-20-2014 17:46:59

## Namibia Qsort

#### 4: Q4

+5	2 IA2								
+4	26 IE8	36 C4	39 C7						
+3	29 IE11	34 C2	43 C11	44 C12					
+2	5 IA5	22 IE4	24 IE6	28 IE10	42 C10				
+1	3 IA3	4 IA4	10 IA10	31 IE13	32 IE14	35 C3			
0	1 IA1	14 IA14	15 IA15	30 IE12	33 C1	37 C5	41 C9		
-1	7 IA7	13 IA13	18 IA18	19 IE1	20 IE2	38 C6			
-2	11 IA11	12 IA12	17 IA17	21 IE3	23 IE5				
-3	16 IA16	25 IE7	27 IE9	40 C8					
-4	6 IA6	8 IA8	9 IA9						
-5	45 C13								

Created by [PQM2mHTM](#) - 09-20-2014 17:46:59

## Namibia Qsort

**5: Q5**

+5	38 C6								
+4	5 IA5	29 IE11	32 IE14						
+3	1 IA1	18 IA18	34 C2	39 C7					
+2	2 IA2	14 IA14	25 IE7	36 C4	40 C8				
+1	9 IA9	10 IA10	11 IA11	22 IE4	26 IE8	42 C10			
0	3 IA3	4 IA4	8 IA8	13 IA13	21 IE3	23 IE5	33 C1		
-1	15 IA15	28 IE10	30 IE12	35 C3	41 C9	43 C11			
-2	7 IA7	24 IE6	37 C5	44 C12	45 C13				
-3	6 IA6	16 IA16	19 IE1	20 IE2					
-4	17 IA17	27 IE9	31 IE13						
-5	12 IA12								

Created by [POM2mHTM](#) - 09-20-2014 17:46:59



# Namibia Qsort

## 6: Q6

+5	29 IE11						
+4	2 IA2	28 IE10	33 C1				
+3	11 IA11	36 C4	39 C7	40 C8			
+2	3 IA3	9 IA9	22 IE4	35 C3	43 C11		
+1	4 IA4	5 IA5	10 IA10	16 IA16	38 C6	42 C10	
0	1 IA1	13 IA13	14 IA14	23 IE5	25 IE7	26 IE8	32 IE14
-1	6 IA6	12 IA12	18 IA18	21 IE3	27 IE9	34 C2	
-2	15 IA15	19 IE1	30 IE12	37 C5	44 C12		
-3	7 IA7	8 IA8	20 IE2	41 C9			
-4	17 IA17	24 IE6	45 C13				
-5	31 IE13						

Created by [PQM2mHTM](#) - 09-20-2014 17:46:59

# Namibia Qsort

## 7: QS7

+5	9 IA9						
+4	15 IA15	32 IE14	34 C2				
+3	10 IA10	11 IA11	26 IE8	37 C5			
+2	3 IA3	5 IA5	16 IA16	40 C8	42 C10		
+1	4 IA4	8 IA8	12 IA12	19 IE1	33 C1	41 C9	
0	1 IA1	14 IA14	17 IA17	18 IA18	27 IE9	35 C3	38 C6
-1	2 IA2	6 IA6	13 IA13	28 IE10	30 IE12	44 C12	
-2	20 IE2	21 IE3	22 IE4	23 IE5	25 IE7		
-3	7 IA7	29 IE11	36 C4	43 C11			
-4	31 IE13	39 C7	45 C13				
-5	24 IE6						

Created by [PQM2mHTM](#) - 09-20-2014 17:46:59

**8: Q8**

+5	34 C2								
+4	14 IA14	32 IE14	38 C6						
+3	1 IA1	2 IA2	18 IA18	44 C12					
+2	4 IA4	6 IA6	15 IA15	24 IE6	42 C10				
+1	13 IA13	21 IE3	26 IE8	29 IE11	30 IE12	36 C4			
0	3 IA3	5 IA5	10 IA10	17 IA17	19 IE1	20 IE2		39 C7	
-1	7 IA7	11 IA11	16 IA16	22 IE4	40 C8	43 C11			
-2	8 IA8	9 IA9	23 IE5	33 C1	35 C3				
-3	12 IA12	25 IE7	28 IE10	37 C5					
-4	27 IE9	41 C9	45 C13						
-5	31 IE13								

Created by PQM2mHTM - 09-20-2014 17:46:59